Industrial Equipment News

FOUNDED 1933

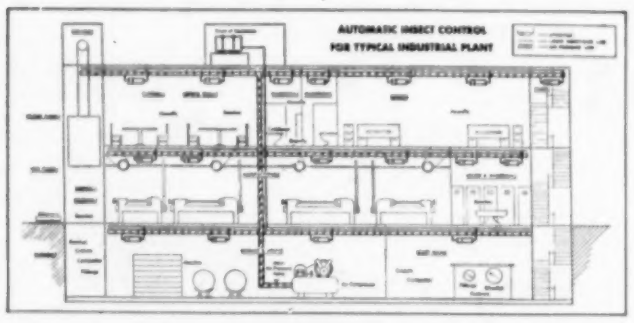
ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 8408**

SPRAYING . . Atomizing equipment and insecticide for automatic control

Source: WEST DISINFECTING CO.
62-18 West St., Long Island City 1, N. Y.



Spreads Vaporsector Fog

Atomizers of new design, with capacity to fog 100,000 cu. ft. of space, are placed at selected locations throughout a plant and its offices and are connected to a central insecticide supply. They connect also, in parallel, to a compressed air or steam line for the propelling action.

A single operator can open a control valve to spread a fine dry insect killing fog through all of the protected plant and office areas simultaneously.

The insecticide is harmless to humans and warm blooded animals. There is no odor, after-taste or residue. The equipment is suited for installation in any type of plant.

If you write maker identify as **IEN - 8409**

LUBRICATING . . Detergent oil cleans and lubricates engine bearings

Source: FISKE BROTHERS REFINING CO.
127-31 Lockwood St., Newark 5, N. J.

Prevents wear and corrosion

Lubriplate H.D.S. is a new lubricating oil for internal combustion engines. It contains detergent additives to keep an engine's bearings free from carbon and sludge formation. It is particularly suited for engines equipped with hydraulic valve lifters. The oil contains oxidation and corrosion inhibitors. Six grades range from SAE 10-W to SAE 50. Packaging is in quart to 55-gal. containers.

If you write maker identify as **IEN - 8410**

YOUR OWN NEW PRODUCTS Let us know what you have "that's new"

Source: INDUSTRIAL EQUIPMENT NEWS
461 Eighth Ave., New York 1, N. Y.

No obligation on your part

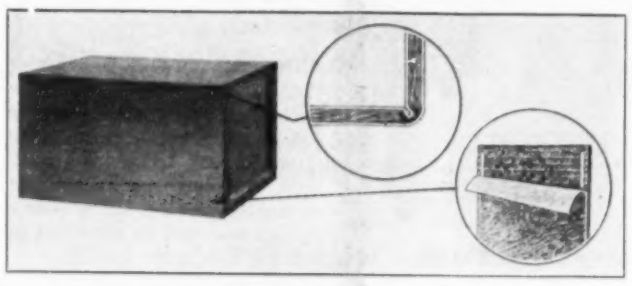
For every new product that reaches an exposition booth, during the season of industrial shows, there probably are hundreds that come quietly on the market and just go to work without benefit of show promotion. We know this is so by comparing the items published in IEN with the show lists of products exhibited. It means of course that your own plants are developing many new things about which no one will know until your salesmen start promoting them to your prospective customers in industry.

There is where you can bring IEN to the attention of your sales and publicity departments. We hope you will tell them that IEN stands ready to describe, without obligation on your part, the new things, you are making for industrial application. All we need are the basic facts, a copy of your literature, a suitable illustration and authority from your company to publish the description. We will assemble our story from this information, make the cut for the illustration and publish the description in our next available issue. We will forward the inquiries that come back to us from those of our 62,000 plant readers who ask for information pointing toward purchase.

If you write maker identify as **IEN - 8411**

PACKAGING . . Foldable fir veneer faced with kraft containerboard sheets

Source: WEYERHAEUSER TIMBER CO.
703 Tacoma Bldg., Tacoma 1, Wash.



Illustrated details in Form F153

Ply-Veneer trade names a new flat stock to make a variety of containers by nailing, banding, wiring, hooking or gluing. The resulting container has structural strength, protects against entrance of dirt and moisture, is light in weight. The material is made of 1/10, 1/8 or 3/16-in. wood veneer faced with 42 or 90-lb. kraft containerboard. Weight is 0.31 lb. per sq. ft. with 42-lb. kraft on both sides of a 1/10-in. core. It is 0.53 lb. per sq. ft. with the 42-lb. kraft on both sides of a 3/16-in. core.

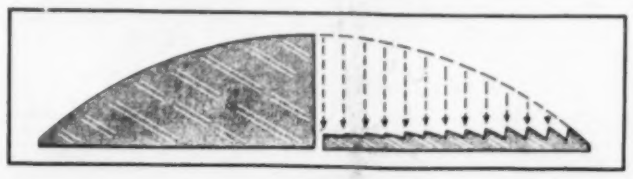
Standard sheet size is 48 in. in trim width and 8, 10 or 12 ft. in length. Trim under 48 in., or lengths longer than 12 ft., can be specified on special order. The company is prepared also to make complete containers in specified dimensions. Both the sheets and the containers are shipped knocked down ready to assemble.

Between the sheet, on one side, and the core are steel straps through which nails can be driven. The grain of the veneer and the layers of kraft are crossed to provide stiffness. Folding is made possible by routing the veneer core during fabrication wherever folds are desired. Thus the material can be bent to angles of 90 deg. or more without weakening. Corners are dust tight because the kraft layers are continuous. Steel straps can be specified under the outer layer of kraft where extra bulge strength is desired on cleatless containers. These are in addition to the nailing straps near each end. Wood cleats can be secured to the blanks by the manufacturer or the user. Cleated end pieces are available.

If you write maker identify as **IEN - 8412**

MAGNIFYING . . Fresnel lens made of thin transparent plastic sheet

Source: BOLSEY CORPORATION
118 E. 25th St., Dept. F, New York 10, N. Y.



Ask for Frenelens Bulletin

Frenelens trade names a new fresnel lens that is made of a relatively thin sheet of transparent plastic in which grooves, similar to those in a phonograph record, are actually precise minute refracting facets. The refracting angle changes gradually from the center to the margin of the lens so all, working together, perform like an ordinary lens in principle.

Pitch is independent of slope and can be chosen to meet given requirements. It can be anywhere from less than 100 per in. to several thousand. A 15-in. diameter unit weighs about 10 ounces. This compares with a continuous surface lens weighing about 25 pounds. Thickness for the new lens is about $\frac{1}{16}$ inch.

Typical applications include industrial magnifiers, microfilm viewers, photomicrographic equipment, focusing camera backs, reflex cameras, optical comparators, tracing and retouching tables, lighting fixtures.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

AUGUST, 1953
VOL. 21 No. 8

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What do you need? . . . check this complete subject index for your current product needs. Asterisks (*) after page numbers mean editorial items. Others refer to advertisements.

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- ☐ *Production, Mr.* .....
- ☐ *Engineering, Mr.* .....
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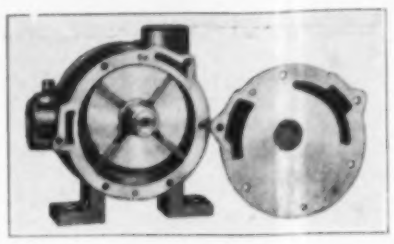
If you write maker identify as **IEN - 8413**

PUMP . . Vane type rotary operates dry, requires no lubrication

Source: LEIMAN BROS. INC.
146 Christie St., Newark 5, N. J.



Bulletin 202-295

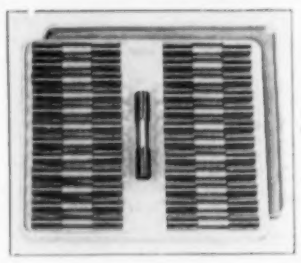
Rotary Oil-Less designates new pump for vacuum to 20 in. of mercury or for pressure to 15 pounds. It delivers air free from oil since none is required in the vane equipped chamber. The rotor is mounted on ball bearings that are located externally, are factory lubricated and permanently sealed. Typical applications include use in food handling equipment, paper feeding and folding, textile equipment, instrument controls.

Four free sliding vanes ride in the rotor in slots that have been honed to present smooth contact surfaces. The interior of the pumping chamber also is honed. The vanes take up their own wear, over a period of service, without loss of pressure or vacuum. Delivery capacity ranges from 1 to 11.5 cfm.

If you write maker identify as **IEN - 8414**

GAGE . . Set of 25 plug units in size variation by ten thousandths

Source: DELTRONIC CORPORATION
9008-12 Bellanca Ave., Los Angeles 45, Calif.



$17 to $29.50

One gage in this new set of plug units is nominal. Twelve range from plus 0.0001 to plus 0.0012 inch. Twelve range from minus 0.0001 to minus 0.0012 inch. Hardness tests 62 to 64 on the Rockwell C scale. Nominal set size can be specified in 64ths from 1/8 to 1 inch.

If you write maker identify as **IEN - 8415**

CONVEYING . . Curved face idler keeps conveyor belt in true alignment

Source: KNAPP MILLS INC.
23-17 Borden Ave., Long Island City 1, N. Y.

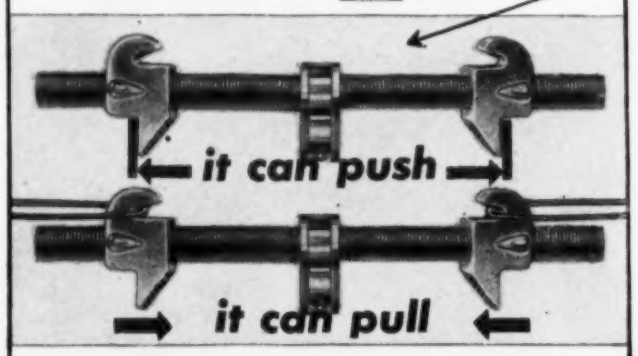
Patented

Guidler trade names new idler roll that presents a curved guiding surface to the edge of conveyor belt. It produces a gradual gentle correcting action to a belt that is tending out from its true course and returns it to center without wearing the belt edge. The idler mounts at a 30-deg. angle on a bracket. It also is free to move a certain distance on its own axis.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8416**

This handy tool can pay for itself on one job!

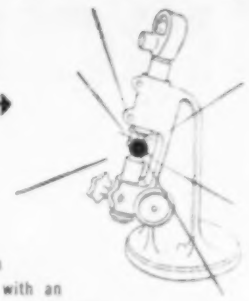


It's a combination screw jack with ratchet lever socket. An ideal tool for pulling together or pushing apart steel plates, beams, pipe, tightening conveyors, straightening equipment. Precision made in 3 models—10 and 15-ton capacities; weighs 46, 50, and 97 lbs.; in length 24, 28, and 38 inches. For complete information, including prices and delivery, ask your local distributor or write the world's oldest and largest manufacturer of lifting jacks for bulletin AD-9 M, The Duff-Norton Manufacturing Co., P.O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.

DUFF-NORTON JACKS
"Giving Industry a Lift Since 1883"

If you write maker identify as **IEN - 8417**

Pattern for Precision



Precision begins with an ideal at New Departure . . . an ideal to achieve the ultimate in perfection. Here, engineering, research and production follow this pattern for precision, and the products of their combined effort—both component parts and completed bearings—are subjected to countless tests and inspections. In fact, many of the instruments used in gauging the accuracy and precision of the bearings were designed and developed by New Departure engineers, and some are exclusive with New Departure. The sensitivity of this equipment is revealed in instances where the sphericity of the cups and cones is held within limits measured in millionths of an inch. And the tolerances for other parts . . . balls, seals and separators...must meet the highest standards. Remember . . . wherever ball bearings are best for the job, the best ball bearings are made by New Departure.

NEW DEPARTURE . . . DIVISION OF GENERAL MOTORS . . . BRISTOL, CONNECTICUT

If you write maker identify as **IEN - 8418**

Give fire half a chance and it will over-run you like a swarm of ants.
You must stamp it out anywhere it shows itself.
In the paint locker, power plant, garage.
That calls for a battery of strategically placed KIDDE Portable Fire Extinguishers.

Kidde

Walter Kidde & Company
836 Main Street
Belleville 9, N. J.

If you write maker identify as **IEN - 8419**

BRAZE HARDENED PARTS SAFELY...with *EASY-FLO*

With this low-temperature silver brazing alloy you can join hardened parts without appreciably affecting their hardness. That's because EASY-FLO's low brazing temperature, plus its remarkably fast penetration the instant this temperature is reached, greatly reduce the amount of heat and heating time required. Use of "chill bars" helps to make doubly sure of preserving hardness.

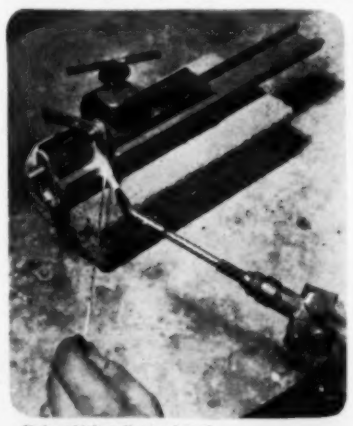
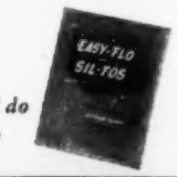


Photo and information courtesy of SALKOVER METAL PROCESSING of NEW YORK, INC.

FOR EXAMPLE—At left is a hardened steel part of a ticket vending machine to which 2 brackets are brazed with EASY-FLO 3/64" wire. Part is held between 2 copper chill bars, one of which has a clamp screw. There's no appreciable change in hardness of the part.



FIND OUT *what EASY-FLO brazing will do for you. Get full details in BULLETIN 20. Write for a copy today.*

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.
Distributors in Principal Cities. In Canada: Handy & Harman of Canada Ltd., Toronto

If you write maker identify as IEN - 8420

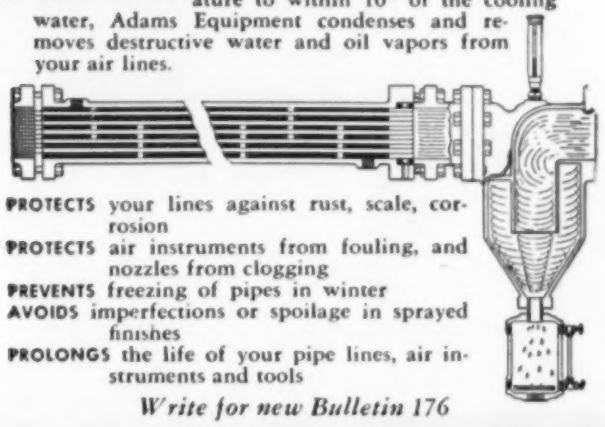
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with **ADAMS Aftercooler and Cyclone Separator**

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

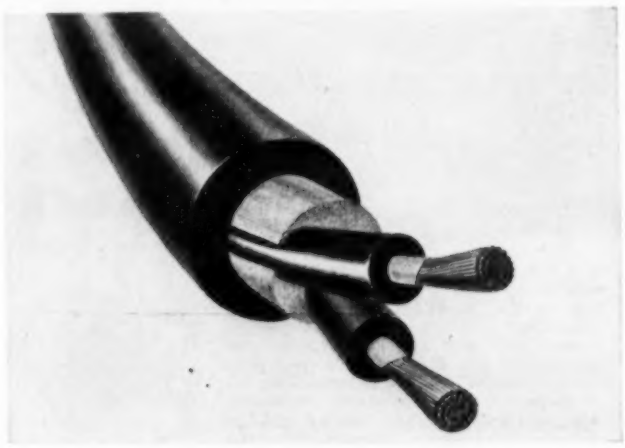
Write for new Bulletin 176

R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

If you write maker identify as IEN - 8421

PORTABLE CORD

Neoprene-jacketed Securityflex takes abuse, won't kink, flexes indefinitely



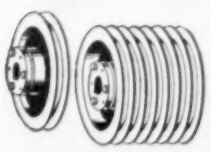
Securityflex* is available as a heavy duty portable cord of one to six conductors, or as a lightweight cord for small tools and lamps. Tough, dense neoprene jacket resists flame, heat, sunlight, aging, ozone, oils, solvents, chemicals and acids . . . protects against cutting, abrasion and crushing. It's so rugged it's used on mine drills! Securityflex delivers safe, adequate power . . . stands up under the toughest conditions. *Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.* 53336

*Trademark

ANACONDA® today's headquarters for wire and cable

If you write maker identify as IEN - 8422

To BROWNING-ize means to ECONOM-ize



SINGLE AND MULTIPLE GROOVE SHEAVES

Save time and money by standardizing on **BROWNING'S** simple interchangeable ***BUSHING*** system in all your power transmission equipment.

RIGID AND FLEXIBLE COUPLINGS

PAPER PULLEYS

SPLIT TAPER BUSHINGS

WRITE FOR Catalog #GC101 and the name of BROWNING DISTRIBUTOR near you.

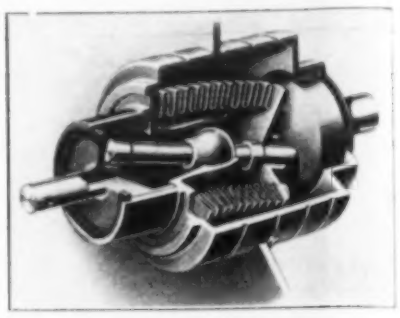
ROLLER CHAIN SPROCKETS

BROWNING MANUFACTURING COMPANY MAYSVILLE KENTUCKY

If you write maker identify as IEN - 8423

DRIVE . . Sealed shaft coupling permits adjustment in sealed interiors

Source: KEARFOTT COMPANY
1148-52 McBride Ave., Little Falls, N. J.



U. S. Patent 2419074

Rotary movement is transmitted through a metal-to-metal seal by this new Hermeflex coupling. It permits external adjustment of mechanisms sealed inside instrument and equipment housings such as electronic equipment, warning devices, explosion proof switches, in order to exclude moisture positively without the use of packings.

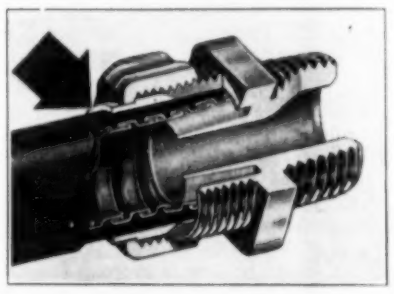
Two types, R-5 and R-10, are intended to transmit torque to adjust instruments and controls but not to transmit power continuously or to rotate at high speeds for long periods. Torque ratings are 5 and 50 in. oz. Overall diameter is about ½ and 1 inch. The housing solders into position in the equipment bulkhead for air tight assembly.

The ball equipped oscillating shaft, that transmits the rotary movement between the input and output plates, does not rotate. It is stationary with reference to the input end of the sealing metal bellows and is soldered to the bellows end plate. The inner end of the bellows is soldered to the housing that encloses the complete assembly and carries the rotating output plate and its shaft extension. The outer surface of the housing is tin plated to prepare it for installation.

If you write maker identify as IEN - 8424

CONDUIT . . Connector fitting for liquid tight flexible conduit

Source: THOMAS & BETTS CO.
60-A Butler St., Elizabeth, N. J.



Slides into conduit

Conduit wiring can be enclosed, against entrance of liquids or oils, by application of this new fitting on the conduit end for assembly into circuit junction boxes. The end of the fitting that faces the junction box has sufficient length to take double locknuts. Its tapered thread provides a liquid tight connection into cast iron boxes. The unit is available in straight, 90-deg. and 45-deg. elbow designs for conduit from ⅜ to 2 inches.

The conduit is grounded and gripped on a tapered inner cone. It is compressed between this cone and the outer integral threaded sleeve when the nut is turned up to draw a plastic ring seal into place in a tapered seat. This seal is color coded to indicate the fitting's size and the fact that it is liquid tight. When the seal is visible beyond the rear end of the nut, the fitting has been properly applied and is correctly grounded. The body is made of die cast zinc alloy in the three smallest straight sizes. Other sizes and shapes are malleable iron.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8425

SAFETY EQUIPMENT FOR ALL INDUSTRIES

TIME SAVING

CON-VENIENT

EXTRA STURDY

Built for SERVICE in Industry

IPCO EXTENSION CORD REEL

Keeps Cord off floor . . . Will not kink or fray . . . No shorts or shocks. Universal bracket for mounting on ceiling or wall, available with various types of fittings at cord end.

Approved By Underwriters Laboratories

Write for Bulletin No. 52

IPCO *Safety Equipment for all Industries*

INDUSTRIAL PRODUCTS COMPANY

2801 N. FOURTH ST. • PHILADELPHIA 33, PA.

If you write maker identify as IEN - 8426

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"LUBRIPLATE Prevented Parts Replacements and Tie-ups"

After clearing 300 acres of salt marsh for the Leslie Salt Company, J. O. Archibald, contractor of Redwood City, California said, "*LUBRIPLATE kept equipment rolling in mud, muck and water.*" You may never have an earth-moving job like this to do, but if you turn a wheel in any industry, you can profit by Mr. Archibald's experience.

1. LUBRIPLATE reduces friction and wear

2. LUBRIPLATE prevents rust and corrosion

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Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

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Fiske Brothers Refining Co.
Newark 5, N. J. Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

If you write maker identify as IEN - 8427

If you write maker identify as IEN - 8428

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Here is a book without a competitor . . . a book 25 years in the making. The current, 7th edition of the Metals Handbook was compiled and written by 68 committees of the American Society for Metals; more than 500 metals engineers were hand picked by the Society as the top experts, the men best qualified to write the most authoritative possible reference book on metals, metal properties, fabrication and uses. The book they wrote is the **Metals Handbook.** It is divided into 37 principal sections, and contains **803 separate articles** and data sheets on metals, metal shaping, forming, heat treating, welding, machining, foundry work, cleaning, finishing, testing, inspection, control and research techniques. All metals, all processes are included. The 64-page index and 4-page section on how to use the book make it easy for any reader to find what he wants. Over 40,000 copies of this edition are now in use by engineers, production men, executives, purchasing agents and others. Order your copy of the 1948 edition today by returning the coupon below. Price is $15.00.

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Address.....
City.....Zone.....State.....

☐ $15.00 enclosed. ☐ Bill me.

If you write maker identify as IEN - 8429

What do you know about the *Moly-sulfide* LUBRICANT?
A LITTLE DOES A LOT

You may have heard about a highly successful solid-film lubricant which is giving remarkable results in the shop and in the field.

In one 40-page booklet we have collected 154 detailed case-histories describing how difficult lubrication problems have been overcome by molybdenum sulfide. If you wish to be up to date about this solid-film lubricant, write for a free copy now.

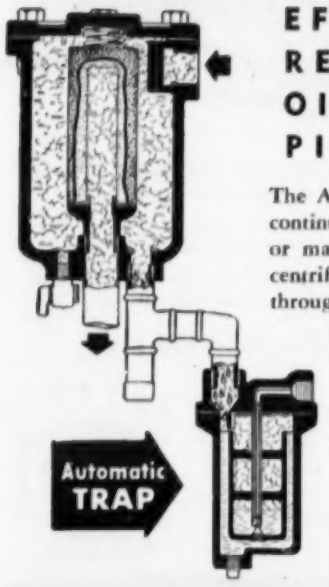
THE LUBRICANT OF MANY USES

Moly-sulfide
A LITTLE DOES A LOT
SEND FOR THIS FREE BOOKLET TODAY

Climax Molybdenum Company
500 Fifth Avenue · New York City 36 · N.Y.

If you write maker identify as IEN - 8430

Poro-Stone Filtration
FOR COMPRESSED AIR



EFFICIENTLY
REMOVES
OIL, WATER
PIPE SCALE

The Adams *Poro-Stone Filter* gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation.

Write for complete data Bulletin 176

R. P. ADAMS CO., Inc.
219 E. Park Drive, Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

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Snappy Action Valves
CRANE Cam and Lever
QUICK OPENING
BRASS GATES

for fast, positive action on steam, water, oil or air lines

You can turn fluids on and off in a snap with this Crane valve. It works on a smooth cam and lever principle, with solid wedge disc. Raises disc fully and seats tightly with no effort; never jams. Made to stand hard usage. Underwriters' approved for hazardous liquids up to 50 pounds pressure. Screwed or bolted cap, depending on size. For further information, ask your Crane Representative or see your Crane Catalog.

WORKING PRESSURES
Up to 125 pounds saturated steam; 200 pounds cold water, oil, or gas, depending on size.
Screwed Ends only.
Sizes: ½ to 3 in.
Air Tested.

CRANE CO., 836 S. Michigan Avenue, Chicago 5, Ill.
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VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

Industrial Equipment News

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VOL. 21 AUGUST, 1953 No. 8

Bits and Pieces

Most of you look through the pages of Industrial Equipment News for individual items to meet current requirements. Most of the items you select are bits and pieces to be built into your facilities and added to your operations. You think, and for the most part we do also, of immediate problems and their solutions because in them is the immediate practical basis for IEN's service.

There is, however, another angle beyond the immediate news. Perhaps it may give you a new view on overall progress that you can use in your own planning for the future. Let's develop this angle by an observation or two, based on our day-to-day contact with new industrial products over the past twenty years.

In each month's news will be perhaps a half dozen new products destined to exert major influence on industrial procedure. These few, month by month, build the foundation for a pattern of progress that points the way inevitably toward future industrial development. Pick them out and you can forecast practices that will be current a dozen years from now.

A few, but only a few, of the new developments will make previous things completely obsolete. For the most part, new things add to, do not subtract from existing facilities. At the same time, manufacturers who will be the industrial leaders tomorrow are studying today, the new developments that may affect them.

Individuals, as well as manufacturers, are prone to remain content with the things they are doing and the way they are doing them until progress can be seen actually going by. That old abandoned plant by the railroad might have been lighted, newly painted and busy had the management been just a bit more alert. You can pick among your own acquaintances those who are studying and installing and applying the new things.

Manual labor, and we include individual time consuming effort of every type, has been the principal target for elimination through new product development. That fact is all around you, not only in the factory but also in the home, office and farm.

First in industry, according to I. J. Karr, Manager of Engineering for General Electric's Electronics Division, is the continuous process factory with an unchanging product. The mass production plant is a close second. Mr. Karr forecasts the job plant next. Following it, will be many an old time establishment where individuals still work at the so called "crafts" handed down from their fathers and their grandfathers.

How about these men whose manual effort the new products and new procedures are replacing? Look at any of the employment records. There is more need, not less, for workers, men and women. Every machine and every operation requires attention. No other machine can give it, and never can, until the way is found to endow machines with brains. Back breaking labor will be gone. Thinking attendants will take its place.

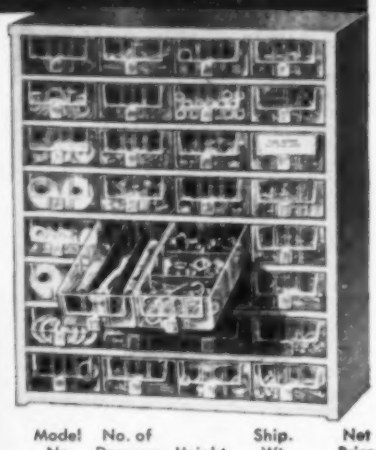
Up from our schools and universities, is coming a new generation of modern workers. They will make our present methods and production records look like the covered wagon days. Our completed accomplishments will be their bits and pieces.

W. E. Irish.

If you write maker identify as IEN - 8432

HAS EVERYTHING!
HANDIEST CABINET EVER MADE FOR STORING SMALL ITEMS

"HAZ-BIN, JR."
SUCCESSOR TO "JIFFY" CABINETS
Contents visible! Lifetime-guaranteed, crystal-clear plastic drawers. Strong all-steel cabinet has individual drawer guides. Baked-on silver-gray hammer finish. Sent complete with index cards, removable lengthwise and crosswise drawer dividers, rubber feet.
All models 6" deep
Models J-8 & J48 12½" wide models
J-64 & J128 — 25⅛" wide
Dimensions below.



Lifetime Guaranteed
CLEAR PLASTIC DRAWERS
Drawer size for all models—2-3/4" wide, 1-7/16" deep, 5-7/8" long.

Model No.	No. of Drawers	Height	Ship. Wt.	Net Price
J-8	8	4 "	4 lbs.	$ 4.25
J-12	12	6⅛"	6 lbs.	5.95
J-16	16	8⅛"	8 lbs.	6.95
J-20	20	10⅛"	9 lbs.	7.95
J-24	24	12⅛"	10 lbs.	9.95
J-32	32	15¼"	13 lbs.	12.95
J-48	48	22½"	19 lbs.	20.95
J-64	64	15¼"	25 lbs.	24.95
J-96	96	22½"	40 lbs.	42.95
J-128	128	30½"	50 lbs.	55.95

J-32-So 24 plastic or large steel drawer 13 lbs., $12.95

10 DAY FREE TRIAL — SEND NO MONEY

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Box 989-N
AKRON 9, OHIO

If you write maker identify as IEN - 8433

Fill Cars FASTER with an **S-A**

BOX CAR LOADER

One man, with an S-A Box Car Loader, can make quick work of loading and trimming a box car. The loader operates without attention after it is placed in the car, and flow of material is started. This handy machine automatically loads and trims in a fraction of the time required by hand methods. Exposure of operator to dust is reduced to a minimum. Save time and manpower with this standard S-A portable loader . . . Handles loose granular material up to 2-inch lump size. Mail coupon for bulletin 948.

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STEPHENS-ADAMSON MFG. CO.
Standard Products Division
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Please send me Bulletin 948 on S-A Box Car Loaders.
Name.....
Company.....
Address.....
City.....Zone...State.....

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WAR SURPLUS SAVINGS

NEW INSIDE – OUTSIDE **VERNIER CALIPERS**
German made by one of Europe's leading specialists in precision tools. Measures inside-outside & depth in .001" to 6" in 1000ths and 1/10mm to 150mm in 10ths. 9.75
MICROMETERS – 0" to 1" in 1,000ths. Has lock-nut & ratchet ...ONLY – . . . 9.75

STAND MAGNIFIER
Handy stand magnifier with universal adjustments. Overall height: 6". Has powerful, clear magnifying lens. 1.99

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Has 3-1/2 GPM capacity at 600 PSI. Motor is 1½ HP, 24V, D.C. Will operate on either 12 or 32V, DC current. Has built-in relief valve adj. to 1500 PSI. This unit ideal for hyd. lifts, portable loaders, etc. 19.50

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A time saver for precision checking. Magnetic base fits curved or flat surface. Has 45-50 lb. pull. Stainless steel 6½" rod mounted in ball socket permits universal settings . . 3.95
Note: We have complete line of instruments, depth gauges, inspection mirrors, etc. WRITE TODAY

HYDRAULIC HAND PUMP
Operating pressure 2000 PSI. Cap., 1.5 cu. in per complete cycle . . . 12.75

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Heavy duty, G.E. Gear Head motor. 2 HP, 24V. DC, 125 amp., reversible motor drives a reduction gear unit giving 36 to 1 ratio at take-off. Also will operate on 6 or 12 volts.
36 to 1 G.E. (306 shaft RPM)
28 to 1 Eclipse (130 shaft RPM)
40 to 1 Eclipse (110 shaft RPM)
10.95 EA.

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Hundreds of uses for any mechanical device needing controlled 2 way action. Opens, closes, raises or lowers doors – windows – gates – valves. CTU-2 – Foote Linear Actuator – 24 volt, DC, 8500 RPM, 1/6 HP – series wound motor. 4½" stroke in 13½ sec. Compression and tension loads up to 750 lbs. Adjustable micro switch for limits of travel. Overall legth., retracted 11" 7.95
We also carry many more sizes and types of Actuators. Write today for information.

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Gives 20,000 lb. thrust (push or pull) using 1500 PSI line pressure as obtained from our hydraulic pumps. Will produce up to 40,000 lb. thrust with 3000 PSI. Can also be used on low pressure air systems. 4" bore; 18" stroke; 30½" length. Ideal for road form – shop machinery. 29.75

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Double action. Bore is 1" – Shaft ½". Has stroke of 2½" to 4". Stroke can be adjusted with internal sleeve stops. Overall length is 8½". Will take 1500 lbs. continuous duty. 3000 lbs. intermittent. Will lift or push up to 1100 lbs. 5.75
We stock over 30,000 Hydraulic Cylinders, Valves, Pumps, Accumulators, Hand Pumps, Motors, Hose, etc. All at Money Saving Prices.

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All Prices F.O.B. Los Angeles

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Soundly engineered, LOVEJOY Flexible Couplings provide maximum alignment correction for smooth power transmission. Vibration, starting torque and shock of intermittent loads are dampened and absorbed. Operational efficiency and economy is increased, motor and machine protected — their service life lengthened. The end result is not only a more profitable, but an improved finished product.

There is a LOVEJOY Flexible Coupling for every requirement. Cushions are made of materials best suited to the load conditions.

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Also Mfrs. of Lovejoy Universal Joints and Variable Speed Transmissions

If you write maker identify as IEN - 8436

Multiple Blades Keep Belt Clean and Dry

SPRING-TYPE
CONVEYOR BELT CLEANER

• Removes wet or dry material from belts before they can be ground into belt by return pulleys and idlers. Adjustable to fit any conveyor. No moving parts, no power required. Easily installed by your own plant personnel. *Cost little, saves a lot!*

MAIL COUPON FOR FULL DETAILS

STEPHENS-ADAMSON MFG. CO. (S-A)
Standard Products Division
231 Ridgeway Ave., Aurora, Ill.
Please send me Bulletin 651 on Conveyor Belt Cleaners.
Name_____
Company_____
Address_____
City_____ Zone____ State____

If you write maker identify as IEN - 8437

No other cutting tool like it. Eliminates the hazards of exposed cutting blades. You must operate it to appreciate its swift and sharp cutting . . . always automatically ready for use. Trigger action gives full blade visibility with safety.

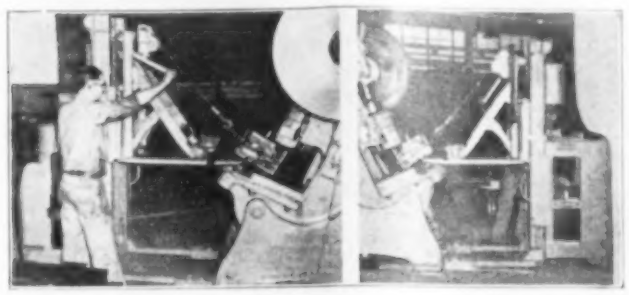
Retail Price $1.50

FLASH BOX OPENER CO., Inc.
52 W. Houston St. • New York 12, N. Y.

If you write maker identify as IEN - 8438

TRUCK . . Electric die handler for tools at level or inclined presses

Source: RAYMOND CORPORATION
35104 Madison St., Greene, N. Y.



Bulletin 732-Z

Press tools, weighing to 1 or to 1½ ton, can be handled between storage racks and either level or inclined press beds with this new rider type electric Die Handling truck. It mounts a ¼-in. removable plate, measuring 24 by 30 in., on its hydraulic lift forks to handle small dies and accessories. It employs a double acting hydraulic mechanism, in connection with a hand operated winch, to push tools into position in a press, either level or inclined, or to pull them back for transport to storage.

The hand winch with its hook equipped wire rope, is employed to pull a press tool from an inclined bed until it can be chain connected to the leading edge of the hydraulic mechanism to be pulled further into carrying position. The winch also applies in final tilting and removal of the tools from the truck platform when they are being placed into working position in an inclined press. For straight pushing and pulling the hydraulic mechanism is employed alone with a chain or rope sling around the tool.

Lowered height of the forks is 7½ inches. Elevated height is either 100 or 130 in. in plain and telescopic designs. Overall mast height is 68 or 83 inches. Overall truck length is 69 or 73 in., depending upon the battery size. Load wheels measure 6 by 4 in. and are equipped with solid rubber tires. Width over the wheels is 32 inches.

The truck will operate, for right angle stacking, in a 6 or 6-ft. 4-in. aisle, also depending upon the battery. The forks are adjustable from an inner position measuring 9¼ in. in length to a maximum extended position of 30¼ inches.

If you write maker identify as IEN - 8439

SANDING . . Portable power tool drives two opposed oscillating heads

Source: CYCLO MFG. CO.
2138 S. Delaware St., Denver 10, Colo.

No experience needed

Sander-Polisher is a new double-head portable tool, available with pneumatic or electric drive. The heads oscillate, do not rotate. The opposed action provides balance that permits the tool to stand stationary on a work surface while in full action at 2,600 oscillations per minute.

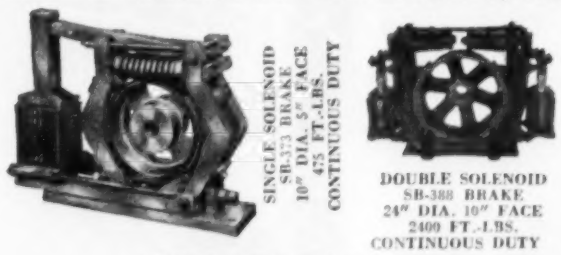
Abrasive paper or cloth, or finishing cloths or wool for final polishing operations, can be applied on the heads. There is no danger of marring or burning a work surface. The tool measures 12¼ in. in length, 8¾ in. in width.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8440

TROMBETTA SOLENOID CORP.

331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.



SB-300 LINE OF BRAKES

Sizes 2½" dia. x 1½" face to 72" dia. x 14" face, continuous rating range from 3 ft.-lbs. to 24,000 ft.-lbs.

8 SPECIAL FEATURES

(1) Operated by long stroke, high power large capacity solenoids. (2) Only 50% of solenoid stroke is used to release the brake. The extra 50% is reserve to take care of lining wear. (3) They can be used for stopping as well as for holding loaded motors. (4) In double solenoid type, one solenoid operates the brake and the other is a spare assuring uninterrupted operation. (5) They are available for all voltages and frequencies alternating current. (6) Also for all voltages direct current series or shunt connections. (7) In shunt operation no series resistances, no discharging resistances are necessary. (8) They are available with oil immersed and explosion proof solenoids.

NINE LINES OF SOLENOIDS, RECIPROMOTORS AND SEMOTORS

See McGraw Hill's Prefiled Electrical Catalogs. Write for Additional Information.

If you write maker identify as IEN - 8441

CHROMALOX *Electric* RADIANT PANELS

Ready to install, 1-ft. x 4-ft. and 2-ft. x 4-ft. pre-engineered Chromalox Panels generate intense, far-infrared energy to meet many processing and finishing heat needs. Tunnels in sizes to fit the work, can be quickly assembled in minimum space. Color-blind far-infrared radiation is absorbed efficiently by all colors and textures, can be controlled precisely, and gives other advantages possible with no other heat source!

Send For Bulletin CS-605

It gives details on pre-engineered Chromalox Electric Radiant Panels and shows how they meet your heat requirements.

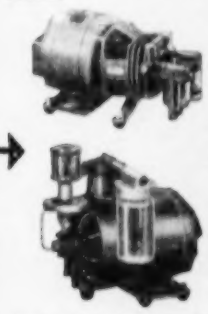
Radiant Heat Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.
See Chromalox Electric Heaters Advertisement, Page 11

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 8442

two handy packages-- these GAST rotary-vane INTEGRAL-MOTOR AIR PUMPS

Standard Model 0210, ¼ H.P., 1.3 C.F.M. to 25 P.S.I. or 27" vacuum. Oil-less Model, to 10 P.S.I. or 15" vacuum.



Model 0320, ⅓ H.P., 2.5 C.F.M., to 25 P.S.I. or 28" vacuum.

You can solve many an air-pump requirement—vacuum or pressure—with one of these "handy packages." For Gast *integral-motor* Air Pumps are widely used as original equipment by engineers who require smooth, dependable performance in a compact, space-saving unit.

The smaller Model 0210, a highly popular unit, supplies vacuum for engraver's printing frames, feeding devices, laboratory use, etc., in either lubricated or oil-less models.

For vacuum to 28" in low volume applications, Model 0320 is used for production line testing for leaks, for punch press feeding devices, etc. There are scores of uses for these "packaged" integral-motor pumps.

see our catalog in S PRODUCT DESIGN FILE ... write for copy

Write for Catalog and Application-Ideas Booklet!

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY AIR MOTORS (TO THREE H.P.) · COMPRESSORS (TO 30 LBS.) · VACUUM PUMPS (TO 28 INCHES)
GAST MANUFACTURING CORP., 11 Hinkley St., Benton Harbor, Mich.

If you write maker identify as IEN - 8443

NEW
DIMENSION SHEETS Give Complete Information

ALLIS-CHALMERS
INSTRUMENT TRANSFORMERS

Just off the press — all the mechanical and electrical information you need in a convenient, completely bound set of data sheets. Gives most thorough presentation of entire line of Allis-Chalmers instrument transformers ever published. Get your copy from your nearest A-C district office or write:

Allis-Chalmers, Milwaukee 1, Wis.

A-4113

ALLIS-CHALMERS

If you write maker identify as IEN - 8444

Here's why the STA-WARM METHOD Melts Compounds so Efficiently

Many feet of closely spaced, specially wound resistance wire blanket sidewalls and bottom of each Sta-Warm melting tank or pot. Result? Uniform, low-wattage heat. Heat is applied in multiple circuits as required. Control devices include pyrometers or thermostats with magnetic contractors.

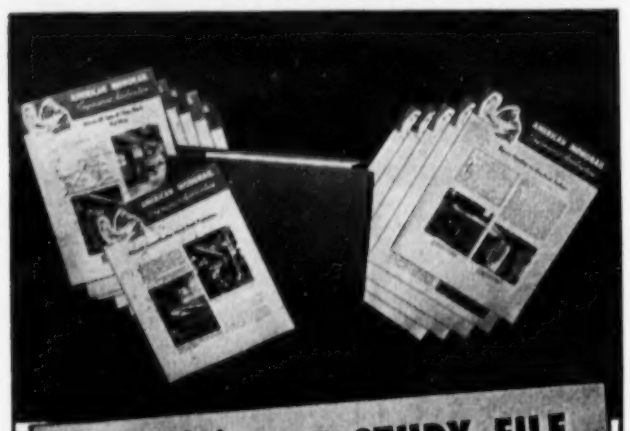
You specify the "ideal" temperature for melting the particular compound your plant uses. Sta-Warm will provide the tank to do the job efficiently and economically.

It's the basic design in the Sta-Warm method that makes this offer so valuable to you.

Send your current compound, resin or soft metal melting problem to Sta-Warm today. *No obligation.*

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN - 8445



A NEW CASE STUDY FILE

For Low Cost Handling

Here's a brand-new case study file which contains the first of a continuing series of case studies covering many successful American MonoRail installations.

Check your handling problems against these "Engineered Applications" of American MonoRail systems.

Send today for original file. Future studies will reach you as published.

THE AMERICAN MONORAIL COMPANY
13111 Athens Avenue • Cleveland 7, Ohio

If you write maker identify as IEN - 8446

NEW...Handy Guide to Spark Testing Tool and Die Steels!

Here's all the information you need on Spark Testing to quickly identify standard tool and die steels.
This new, 20-page Carpenter Guide to Spark Testing will help you . . .

1. Separate mixed tool steel stocks.
2. Double-check the type of steel before starting to make a tool or die . . . and before heat treating.
3. Segregate tool steel scrap for salvage.

To help conserve steel and avoid heat treating errors that are costly in time, labor and money, put Carpenter's new Spark Testing Guide to work in your plant. This guide is offered free to tool steel users. For your copy, clip and mail coupon, now.

THE CARPENTER STEEL COMPANY
151 W. BERN ST., READING, PA.

Please send me a copy of your new, handy guide to Spark Testing Tool and Die Steels.

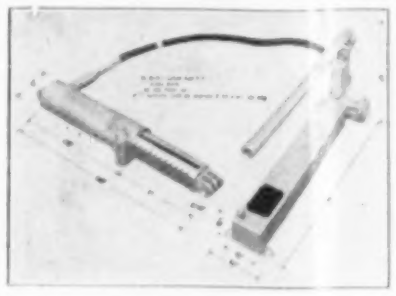
NAME ..... TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....
(Please Print)

To help us get this guide to you personally, be sure to include your title and Company name.

If you write maker identify as IEN - 8447

CYLINDER . . Hydraulic ram and hand operated pump rate 10 ton

Source: WM. S. PINE
1637 E. 22nd St., Los Angeles 11, Calif.



Cannot retract alone

Hydro Latch is a new ratchet equipped cylinder and ram assembly measuring about 20 in. in overall extended length. The 7-in. stroke is guarded against retraction by a ratchet and pawl with a lever operated release when return is desired. The cylinder measures 3 in. in diameter. Clevises on cylinder and ram provide for mounting.

Pressure is supplied by a hand operated hydraulic pump also measuring about 20 in. in length. The pump mechanism stands 9 in. in height at one end. Reservoir housing width is 2½ inches. Oil is the hydraulic medium.

If you write maker identify as IEN - 8448

WRENCH . . Open end utility tool to burr thin wall tube and assemble it

Source: APPLETON ELECTRIC CO.
1713 Wellington Ave., Chicago 13, Ill.

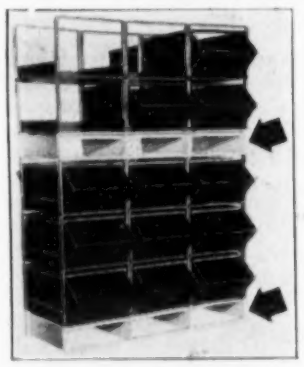
Applies company's fittings

Hardened plates on the two openings of this new wrench provide a means to burr a freshly cut thin-wall conduit, both inside and outside, prior to assembly of a compression fitting. The plate then assists in positioning the wrench on a fitting nut to tighten or loosen it. Two sizes fit ½ and ¾-in. conduit fittings and 1 and 1¼-in. fittings.

If you write maker identify as IEN - 8449

HANDLING . . Double face pallet to carry and stack materials in racks

Source: STACKBIN CORPORATION
1077 Main St., Pawtucket, R. I.

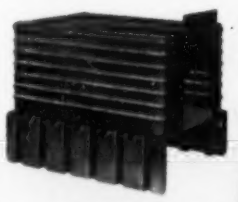


Simplifies handling

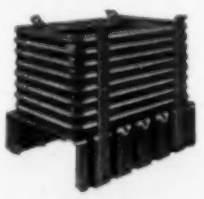
New pallet is a box type unit to serve as a base for the company's stacking racks, previously described IEN-8187-53. It can be picked up by a fork truck and moved from one location to another with the racks and their sliding Stackbin boxes. The pallets interlock with the racks to provide a secure assembly. The arc welded construction is finished in baked enamel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

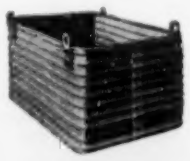
If you write maker identify as IEN - 8450



Type PB-650 box and platform units with sliding end door.



Type PB-120L box and platform.



Type B-80C box unit equipped for crane handling; corrugated bottom.

Preferred... THROUGHOUT INDUSTRY

Republic STEEL BOXES and SKIDS

● Designed to give maximum strength and rigidity, Republic Steel Boxes and Skids are preferred throughout industry for their ability to carry the load and keep things moving. Specify "Republic" when you want the best in steel boxes and skids.

Write for illustrated catalog.

PRESSED STEEL DIVISION
REPUBLIC STEEL CORPORATION
6200 TRUSCON AVE. • CLEVELAND 27, OHIO

If you write maker identify as IEN - 8451

For 30 Years—EXPERTS AT STAMPINGS IN SMALL LOTS SHORT RUNS

Represented nationally in principal cities.

DAYTON ROGERS *Manufacturing Company*

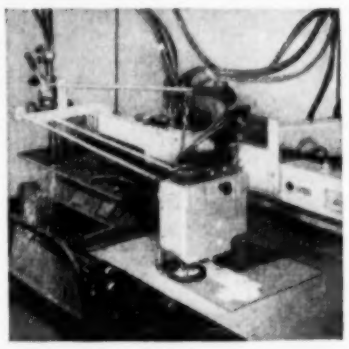
MINNEAPOLIS 7, MINN.

If you write maker identify as IEN - 8452

SIMPLIFY Your Shape-Cutting Jobs with the... OXWELD Automatic Tracer

Trade-Mark

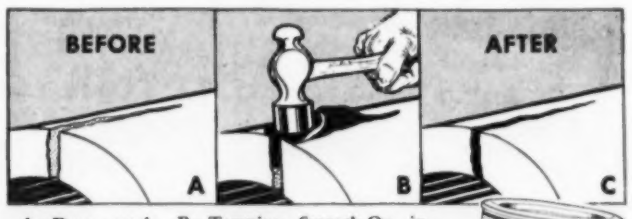
- Positive templet contact... electronic steering control ... maximum tracing accuracy
- Templets are easy to make, low-cost
- No kerf allowance required in templet
- Dynamic braking prevents overruns
- Local or remote controls ... simple to operate



With an OXWELD Automatic Tracer to guide your oxygen-cutting machine, you need never forego the advantages of templet tracing because of time or cost. Just cut actual size templets out of thin plastic sheet with scissors—that's all! Tracer follows practically any templet shape within extremely close tolerances. Drive action is smooth and steady with both single- and multiple-blowpipe setups. Write today for free booklet F-8086.

LINDE AIR PRODUCTS COMPANY
A Division of Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.
Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto
The term "Oxweld" is a registered trade-mark of Union Carbide and Carbon Corporation.

If you write maker identify as IEN - 8453



A—Deep crack. B—Tamping Smooth-On in. C—Crack completely sealed.

If You've Never Used SMOOTH-ON, read this:

Smooth-On No. 1 Iron Cement is a metallic powder which you mix with water to the consistency of putty. You tamp it, while still soft, into a crack or hole, making sure to force it against all surfaces. With Smooth-On you don't need to use heat or special gadgets. As it hardens, it expands slightly, clinging tightly in place. The repaired part is ready for use as soon as Smooth-On sets hard. Keep Smooth-On handy for both emergency and routine maintenance repairs. Get it in 7 oz., 1, 5, 20, or 100 lb. size. If your supply house hasn't Smooth-On No. 1, write us.

FREE 40-PAGE REPAIR HANDBOOK

Shows many industrial and home repairs made with No. 1 and other Smooth-On Cements. Leaks stopped, cracks sealed, loose parts made tight. 140 illustrations. Drop us a line for YOUR free copy.

SMOOTH-ON MFG. CO., Dept. 1
57 Communipaw Ave., Jersey City 4, N. J.
SO-293

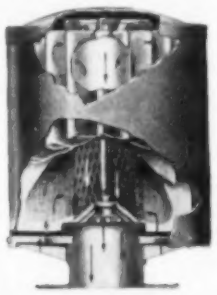
Do it with SMOOTH-ON

THE IRON REPAIR CEMENT OF MANY USES

If you write maker identify as IEN - 8454

"LET'S SPECIFY **STAYNEW** INTAKE FILTERS

They Give Us Positive Protection . . . They won't need
Regularly Scheduled Maintenance . . . They're Easy
to Clean on the Job . . . Efficient over a Wide Range of Loads
They're not Affected by Temperature Change
There's no Oil Carry-Over
OUR EQUIPMENT WILL LAST LONGER!"



MODEL D
Intake Filter

Staynew Intake Filter's *Positive Protection* stops carbon accumulation and needless wear by keeping dust and dirt *out* of air intakes. And Staynew Filters frequently operate two or more years *without maintenance*. Specify Staynew and lengthen equipment life—increase productive time.

Write for Complete Booklet on Staynew Intake Filters.

Representatives in Principal Cities

DOLLINGER STAYNEW FILTERS

DOLLINGER CORPORATION
3 Centre Pk., Rochester 3, N. Y.

ALL TYPES OF FILTERS FOR EVERY INDUSTRIAL NEED

If you write maker identify as IEN - 8455

CHAMPION E-X-P-A-N-D-I-N-G MANDRELS

Precision Model

Standard Model

give speed to every set-up

The flexible sleeve, mounted on tapered arbor, expands automatically to fit the hole. Inserted by hand — no arbor press needed. Always an exact, positive, concentric fit. Locked by a single mallet blow. Unlocked the same way. CHAMPION Expanding Mandrels are used in machine shops around the world. Save time, cut production costs, whether the job calls for machining one piece or a thousand.

Precision Model has expansion range of .010". Available in regular sizes to fit holes from ½" to 3" diam. Holds work to tolerances of .0002" run-out. Guaranteed for precision grinding, turning and milling operations.

Standard Model maintains close tolerances, handles material of any length bore, hard or soft metals — from thin tubes and bushings to heavy castings and forgings. A set of fourteen will fit every hole from ½" to 9½" diam.

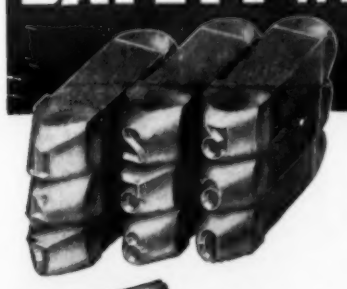
CHAMPION *Expanding Mandrels can be made in special shapes and sizes to fit any specifications. Quotations on request. Write for descriptive folder today.*

WESTERN TOOL & MFG. CO., INC.
Dept. 22 Springfield, Ohio

If you write maker identify as IEN - 8456

WANT MORE EFFICIENT— LONGER LASTING STEEL STAMPS?

USE "SAFETY" WEDGE GRIP LETTERS and FIGURES



- No Spall
- No Mushroom
- More Service
- Knurled Grip
- Patented under No. 2,089,794
- Thumb Side Markings

Knurled sides for positive grip—patented design provides perfect balance and deeper impressions. Especially recommended for toughest jobs on steel castings, cylinders, tool steel, etc. All sizes available 1/16" to 1" characters.

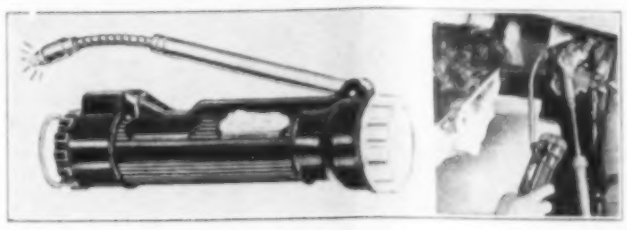
Write for Catalog 100

Mecco SAFETY MARKING TOOLS **M.E.CUNNINGHAM CO.**
1039 CHATEAU STREET, PITTSBURGH 33, PA.

If you write maker identify as IEN - 8457

LIGHTING . . Industrial flashlight with standard lamp and hinged probe

Source: U. S. ELECTRIC MFG. CORP.
222 W. 14th St., 2nd Floor, New York 11, N. Y.



$6 less batteries

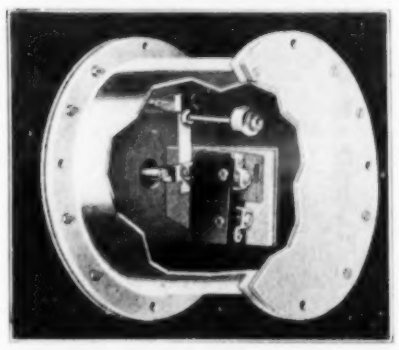
Inspectors, precision workers, maintenance mechanics are the intended users of this new Duo-Flex flashlight. It is a combination assembly of a standard 1,000-ft. fixed focus lamp for general use and a hinged probe lamp that carries an integral spot focusing lens. The probe lamp rides in a recess built on the flashlight barrel where it makes contact to complete the circuit through the switch to the regular lamp. It hinges out of this recess to point at an angle or forward. In the latter position, the circuit is through it and not the regular lamp so one switch operates both lamps selectively.

The hinged portion is about 6 in. in length. It can be extended another five by pulling out a telescoping flexible conduit on which the probe lamp socket is mounted. The main barrel takes two Type-D dry batteries. It is fitted at the front with a red transparent plastic ring. It shines when the flashlight is standing on its face with the light turned on. The control switch has two positions, one to deliver a steady light from one lamp or the other, the second to make active a push button or code signaling. A carrying ring is included in the screw base. Turning this base out of the housing releases the batteries and makes accessible two spare lamps.

If you write maker identify as IEN - 8458

CONTROL . . Materials level indicator for use on bin, chute, or a conveyor

Source: BIN-DICATOR COMPANY
93-13946 Kercheval Ave., Detroit 15, Mich.



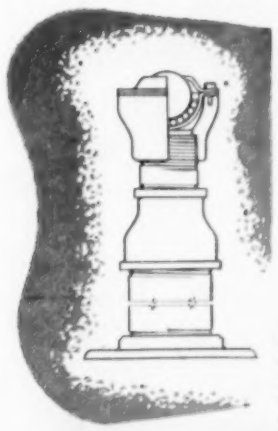
List is $28

Bantam designates a new small size in the company's line of bin level indicators and controls. It is intended for installation in spaces too limited to permit the use of the larger standard model units, such as the one previously described IEN-7756-53. It can be mounted on the outside of thin walled bins, on the inside of bins with thick walls. It also can be suspended from a bin cover.

The operating diaphragm is a 4-in. unit. Overall housing diameter is 5¾ inches. Diaphragm action is opposed by an adjustable weight to employ gravity so no springs are required. The assembly operates without need for lubrication. The switch is a single pole single throw unit, normally open or normally closed. It rates 10 amp. on 110-volt ac. Weight is about 6 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8459



Logan Ball Pedestal units consist of a large steel ball which rotates on a bed of smaller balls contained in a hardened steel cup with semi steel housing.

BALL PEDESTAL

Logan Ball Pedestals are particularly adapted to handling sheets or plates around shears and punch presses or other machines. The ball units permit turning or moving the plates in any direction and the pedestal construction provides a means of conveying without blocking the working area.

Logan offers Ball Pedestal units in several different sizes. Further information on request.

Ball Transfer units also available for table mounting.

Logan Conveyors
LOGAN CO., 276 CABEL ST., LOUISVILLE, KY.

If you write maker identify as IEN - 8460

Jrl Ad T-620(41)

New!

Steam Homo® Furnace Catalog

• This new 11-page catalog gives complete information and specifications regarding the L&N Steam Homo method for heat-treating. Also included are data and a number of installation photos to illustrate the very real advantages of the Steam Homo method. Applications covered include heat-treating nonferrous parts, powdered iron compacts, high speed steel cutting tools, and the safe, uniform bluing of ferrous parts.

Write for your free copy today. Leeds & Northrup Company, 4905 Stenton Ave., Philadelphia 44, Penna.

LEEDS & NORTHRUP
instruments automatic controls • furnaces

If you write maker identify as IEN - 8461

HERE'S A "GOLD MINE" OF USEFUL INFORMATION on Roller Chains and Sprockets

Our new Baldwin-Rex Roller Chain and Sprockets catalog contains a wealth of useful information, complete specifications and prices on our complete line of stock roller chains and sprockets, examples of drive selection, how to select and order sprockets, maintenance information, flexible couplings and much, much more . . . 56 pages in all.

Everyone who uses roller chains or has a power transmission problem should have this book. *Send for free copy today.*

BALDWIN-REX ROLLER CHAINS
® Chain Belt Company 53-413
Baldwin-Duckworth Division
358 Plainfield St., Springfield 2, Mass.

Gentlemen: Please send me Bulletin 52-1.
Name.....
Company.....Dept.....
Address.....
City.....State.....

If you write maker identify as IEN - 8462

5 REASONS WHY BLAW-KNOX ELECTROFORGED® GRATING IS YOUR BEST BUY

- STRENGTH
- SAFETY
- LOW UPKEEP
- LONG LIFE
- SELF-CLEANING

We factory-fit this one-piece Open Steel Flooring to your dimensions for easy installation. You can cover dangerous open areas and add useful space inside and out.

USE COUPON FOR DETAILS AND PRICES

BLAW-KNOX COMPANY
GRATING DEPARTMENT
BLAW-KNOX EQUIPMENT DIVISION
P.O. Box 1198, Pittsburgh, Pa.

Please send prices on____sq. ft. Grating as per specifications marked at right.
Please send prices on___Type___Stair Treads___inches wide.
COMPANY_____
INDIVIDUAL_____
STREET_____
CITY_____ZONE____STATE____

BLAW-KNOX ELECTROFORGED® STEEL GRATING

If you write maker identify as IEN - 8463

Presenting THE 12" SWING Logan LATHE

IT'S BIG . . .

With 12" swing, 1" collet capacity, 1¼" spindle hole, and 35" center distances this newest Logan handles most lathe work.

IT'S RUGGED . . .

Heavy headstock, massive spindle and rugged construction throughout make it a lathe of precision, stability and power.

IT'S VERSATILE . . .

Hogs out heavy cuts smoothly. Equally effective in high speed production and second operation work. Sustained accuracy at all spindle speeds (38 to 1260 rpm) is inherent in the ball bearing spindle mounting. Features like extra, large compound and cross feed dials adapt it to exacting tool room operations. Durable construction and enclosed design are important advantages in the school shop.

IT'S ACCURATE . . .

Wide-spaced, oversize ball bearing spindle mounting means *sustained* accuracy. Total spindle run-out, 12" from bearing is less than .0005". 6½" wide bed is heavily ribbed for rigidity. 2 V-ways and 2 flat ways precision ground to within .0005". Large dials on new carriage permit accurate readings. Precision built throughout.

IT'S SIMPLE TO OPERATE . . .

No spindle adjustment for any speed from 38 to 1260 rpm. Dials are easy to read, controls easily accessible. Outboard drive simplifies belt adjustment. New operators quickly master it.

IT'S ECONOMICAL . . .

By multiple savings—investment, maintenance, space and power—the 12" Logan brings new economy and profits to lathe operation.

Get full facts—See your Logan Dealer—or WRITE to

LOGAN ENGINEERING CO.

Lawrence and Lamon Avenues Chicago 30, Illinois

If you write maker identify as IEN - 8464

One-Man DRUM TRUCK

Makes Loading And Unloading Of Drums Up To 1000 Pounds Automatic

Handling of drums and barrels becomes a cinch for one man with this Thomas Safety Drum Truck. Trucker never touches barrel—loading and unloading is automatic. Sliding 2-in-1 hook fits all wooden and metal barrels; cradles drum securely so it can't roll off. Available with chemical resistant tires. Order one on trial basis.

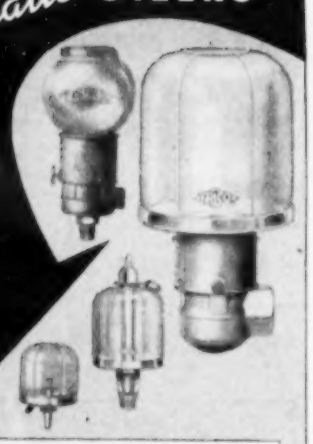
The No. 90 Thomas Drum & Barrel Truck shown above has a capacity of 1000 lbs., weighs 80 lbs.

THOMAS TRUCK & CASTER CO.
307 Mississippi River
Keokuk, Iowa

Send for free literature

If you write maker identify as IEN - 8465

TRICO Automatic OILERS



SLASH LUBRICATION COSTS UP TO 75%

There's a Type and Style for Most Every Application

- Constant Level
- Gravity Feed
- Wick Feed
- Multiple Feed (Solenoid and manual control)
- Oil Cup & Gauge
- Thermal & Bottle
- Large Capacity Gravity Feed

Exorbitant claims? . . . not at all. It's a PROVEN fact that where TRICO Oilers are properly applied, savings are tremendous. Check these "hidden" costs of "trust-to-luck" daily hand-oiling—Costs of labor to apply and frequency of application . . . Lost PRODUCTION TIME . . . Premature wear and parts replacement . . . Shortened equipment life . . . Fire and accident hazards, etc.

WRITE FOR FREE CATALOG

It contains complete details, including dimensional specifications

TRICO FUSE MFG. CO. MILWAUKEE, WIS.

If you write maker identify as IEN - 8466

MILLING . . High speed end mills, high helix, curved undercut tooth face

Source: GODDARD & GODDARD CO.
12282 Burt Road, Detroit 23, Mich.

Is the Hi-Lix line

Seven new styles have been added by the company to its standard line of high speed steel end mills. The new units include long and extra long sizes and small diameters to provide a line that now includes 149 stock cutters in diameters from $\frac{1}{16}$ to 2 inches. There are three new styles of heavy duty cutter with 2-in. shanks in the stocked units.

If you write maker identify as IEN - 8467

LAYOUT . . Equipment templates printed on film, ¼ in. to 1 ft. scale

Source: REPRO-TEMPLETS INC.
River Road & Pennsylvania Ave., Oakmont, Pa.

Each template is identified

The company announces availability of individual templates, at an average cost of 8 to 12 cents each, of the original sheets containing a large number of the templates, previously described IEN-3615-52. The templates can be selected from a stock of approximately 10,000 standard machine tools and metal working plant equipment items. Scale layouts can be made on film grid sheets for print reproduction.

If you write maker identify as IEN - 8468

CLEANING . . Vacuum machine picks up dust, dry litter from a floor

Source: HANDLING DEVICES INC.
41-45 Pearl St., Room 483, Brookline 46, Mass.

Operator moves it

The intake head is secured directly to the motor or engine driven suction blower on this new Plantman Floormobile machine. The blower, flexible connecting hose, collector tank and dust bag are wheel mounted to move along a floor at a walking pace.

The machine will pick up dust, powders, dry litter in a path 22 in. in width. Air handling capacity of the blower is 860 cfm. at 3,400 rpm. The machine stands 23 in. in width, 32 in. in length without the steering handles. The suction orifice measures 1½ by 22 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8469

SEND FOR THIS FREE BOOK!

BUILD YOUR OWN CONVEYOR SYSTEM with MHS standardized conveyors

The right conveyor system can cut costs for you by speeding movement of materials, reducing unproductive labor, streamlining receiving, production, and shipping. Get the MHS standardized conveyor catalog, showing all types of modern conveyors, and plan your own system. Write for free illustrated catalog PE-G1.

MECHANICAL HANDLING SYSTEMS INC.

4605 NANCY AVE., DETROIT 12, MICH.

OFFICES IN PRINCIPAL CITIES

In Canada—Canadian Mechanical Handling Systems Ltd., Toronto

If you write maker identify as IEN - 8470

SHADOGRAPH'S New Center Tower Scale . . .

THERE IS NO SUBSTITUTE FOR EXACT WEIGHT

We announce a new addition to the already famous Shadograph models, the newly designed center tower type with all the features of previous models with these added improvements (1) commodity platter on one side of tower and counterweight platter on the other side (2) beam and poise mounted in front for easy, quick weight changes. All new models use the reflected shadow type of weight indication . . . all mechanical indication is eliminated and frictionless indication is produced. Five models in various capacity ranges are available starting from 50 grams, with a sensitivity of 10 milligrams to 1500 grams with sensitivity to 350 milligrams. Write for full details covering models to fit your operations.

EXACT WEIGHT SCALES

BETTER QUALITY CONTROL
BETTER COST CONTROL

THE EXACT WEIGHT SCALE COMPANY

932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

If you write maker identify as IEN - 8471

STONEHOUSE SIGNS FOR ACCIDENT PREVENTION

TO KEEP PRODUCTION UP . . . KEEP ACCIDENTS DOWN

Safeguard the worker against hazards and accidents—with the help of

STONEHOUSE SIGNS

Made in accordance with "American Standards Ass'n Specifications for Accident Prevention Signs"—the only authentic standards.

Write for complete Catalog No. 9, showing hundreds of different stock-worded Accident Prevention signs. It's free on request.

Stonehouse **SIGNS, inc.** MANUFACTURERS

Stonehouse Building · 842 Larimer · Denver 4 Colo.

"SIGNS SINCE 1863"

ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS

If you write maker identify as IEN - 8472

COOL BEAUTY that gives you the AIR . . .

RIGID-tex METALS add Mar-Resistant Beauty to Room Air Conditioners

- hot, muggy days can be whisked away with a flick of a switch on modern room air conditioners, and damage to unit surfaces from dents, scratches or fingerprints can be forgotten forever with handsome Rigid-tex Metal trim on cabinets and control panels. design-strengthened patterns add unusual eye-appeal that helps sell customers on sight.
- write for your copy of detailed Design Imagineering Folder.

pattern 1-RF

RIGIDIZED METALS CORPORATION

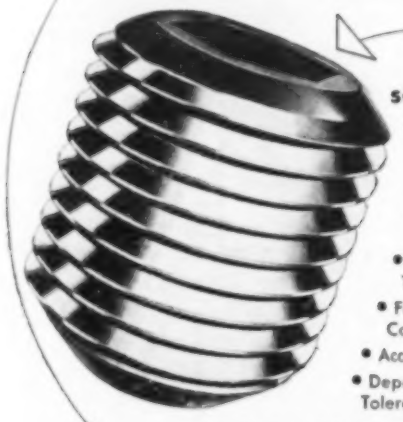
6648 Ohio Street Buffalo 3, N. Y.

50 Warehouses and Sales Representatives in all Principal Cities throughout the U.S. & Canada

U.S. and Foreign Patents

If you write maker identify as IEN - 8473

GROUND THREAD Socket Set Screws



set new standards for

- Super-Smooth Finish
- Uniform Hardness and Toughness
- Clean Starting Threads
- Faultless Thread Contour
- Accurate Hex Dimensions
- Dependable Class 3 Tolerance

Samples free. Ask your P-K Distributor or write: Parker-Kalon Corporation, 200 Varick St., New York 14.

Compare . . . you'll agree IF IT'S P-K . . . IT'S O.K.

PARKER-KALON®
SOCKET SCREWS

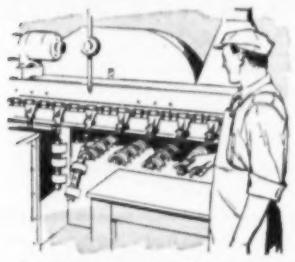
If you write maker identify as IEN - 8474

See how Carboloy magnets save time, money in the shop

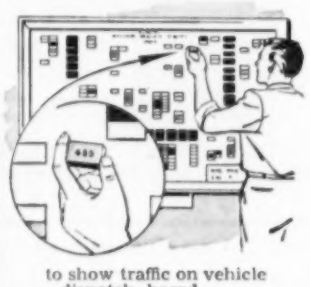
FREE
PERMANENT MAGNET IDEA KIT

Send for free magnet kit containing suggestions that really pay off in the plant. See how Carboloy permanent magnets can eliminate costly clamps, jigs, vises . . . how they'll save you time and maintenance costs. Magnets need no electric power. Cost nothing to operate – last forever.

Shown below are a few of the ways magnets are used as mechanical holding devices – working better, cheaper, faster than devices previously used.

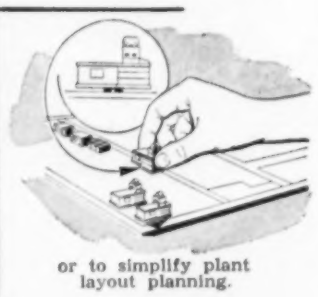


In plating-rack conveyors, for example . . .



to show traffic on vehicle dispatch board . . .

to attach ground from portable welders . . .



or to simplify plant layout planning.

Get a "You-Try-It" Magnet Assortment

Shop Package No. 1 – Contains 48 Carboloy Permanent magnets: 8 styles – 3 pairs each. Magnetic pull up to 2 lbs. per magnet. Price $10.00. Send coupon today.

Shop Package No. 2 – Contains 18 magnets: 4 styles – 2 pairs each; and 1 style – 1 pair. Magnetic pull from 3 lbs. to 12 lbs. per magnet. Price $15.00. Order today.

"Carboloy" is the trademark of the Carboloy Department of General Electric Company

MAIL THIS COUPON TODAY

CARBOLOY
DEPARTMENT OF GENERAL ELECTRIC COMPANY
11177 E. 8 Mile Street, Detroit 32, Michigan

- ☐ Send me free Magnet Idea Kit
- ☐ Send me ___ Shop Package No. 1 at $10.00 each, postpaid.
- ☐ Send me ___ Shop Package No. 2 at $15.00 each, postpaid.
- ☐ Enclosed is check or money order for $ ___. ☐ Send C.O.D.

Name _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 8476

HANDLING . . Tote boxes, parts bins, support bases, racks, for changing needs

Source: BATHEY MFG. CO.
141 S. Mill St., Plymouth, Mich.

Illustrations, data in 24 page brochure

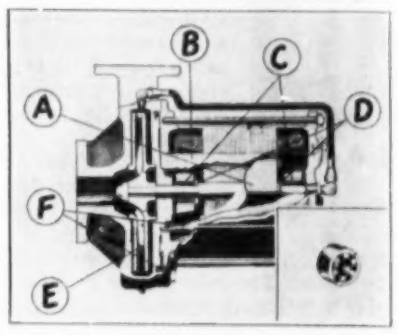
Work pieces, for sub-assembly and final assembly, can be brought to the job in the tote boxes that form a part of this new demountable handling and storage equipment. The tote boxes can be arranged on support bases, in adapter racks and table tops. Small parts bins can be added in desired arrangements. Sections of the box and bin assembly can be picked up by a lift truck for movement to a new location or rearranged to meet changing requirements. In each case, the units nest or hook, one to another, without fasteners.

Applications include stock rooms, parts departments, tool cribs, assembly and processing departments, mantenance and repair. The bin-type tote boxes provide easy access. They can be slid out of their supporting adapter frames like drawers. Standardized box dimensions are 12 by 23 by 8 in. with overall length, including the bin front, at 27 inches. The small parts boxes range from 1¾ by 6 by 2¾ in. to 6 by 11⅛ by 2¾ inches. Clip-type label holders are provided.

If you write maker identify as IEN - 8477

PUMP . . Motor driven centrifugal, in sealed self-lubricating assembly

Source: CHEMPUMP CORPORATION
1302 E. Mermaid Lane, Philadelphia 18, Pa.



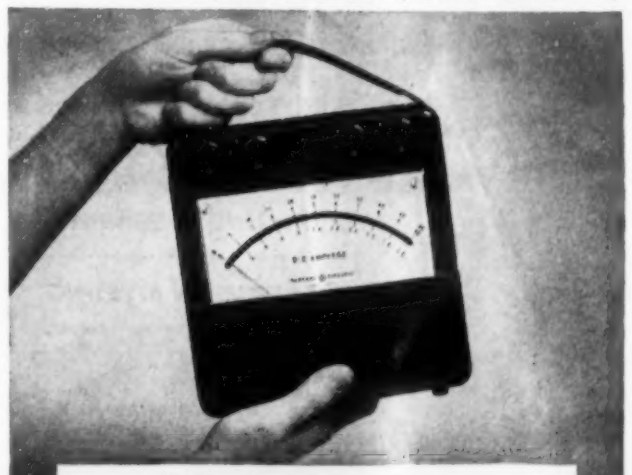
Bulletin G-1000

Two new sizes, with ⅓ and ¾-hp. motors, have been added to the previously developed 1, 2 and 3-hp. assemblies of sealed motor and centrifugal pump. The design is characterized by the hermetically sealed motor rotor A and the cylinder B installed in the gap between rotor and stator. This cylinder seals the stator, permits part of the fluid being pumped to circulate through the space occupied by the rotor. No seal or packing is required between pump and motor. The rotating shaft is mounted on Graphitar bushings C and the pumped fluid serves to lubricate them. Thrust is taken by the washers D. O-rings, at F, seal the impeller E and the bearings.

Capacities range to 150 gpm. Working pressure is to 150 pounds. Temperature is to 450 deg. F. Motor and impeller can be withdrawn through the stator housing so the pipe connections need not be disturbed. Suction connection is 1 and 2 inches. Delivery connection is ¾ and 1½ inches. The pump is suited to handle corrosive, radioactive, highly volatile fluids in pressure and in vacuum processes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8478



G.E. Announces . . . New d-c Portable Instrument

- Accurate within ½ of 1% of full scale
- Molded window allows more light on 5½" scale
- Built to withstand shock and vibration with spring-mounted jewel bearings
- Prices begin at $75.00*

For details, contact your G-E Apparatus Sales Office, or write Section 602-261, General Electric, Schenectady 5, N. Y.

*Mfgr's suggested retail price

GENERAL ELECTRIC

If you write maker identify as IEN - 8479

Small precision metal parts... Torrington makes them better, and for less!

FREE CATALOG — shows the great variety of small parts we can produce inexpensively and promptly. Send for copy today!

If your product uses small precision metal parts . . . pivots, pins, dowels, rollers, mandrels, needles, punches, etc. . . . send us your blueprints for a prompt quotation.

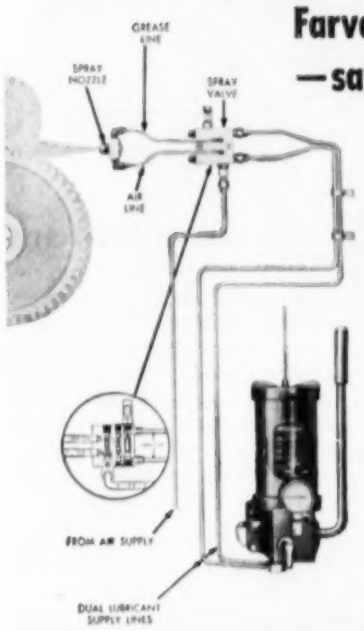
As a leading contract fabricator, TORRINGTON is equipped with the special machinery to produce in any quantity for quick delivery at low prices.

THE TORRINGTON COMPANY
Specialties Division
360 Field Street • Torrington, Conn.

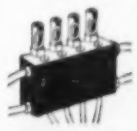
Makers of
TORRINGTON NEEDLE BEARINGS

If you write maker identify as IEN - 8480

Lubricate open gears evenly with Farval Spray Valve —save up to 95%



• For three years, Farval Spray Valve Systems have been distributing and maintaining oil or grease films evenly on open gears and slide surfaces. Farval Spray Valves save up to 95% of lubricant, eliminate friction, increase machine efficiency, lower power costs, reduce wear on bearing surfaces. Write for Farval Spray Valve Bulletin No. 60 today.



THE FARVAL CORPORATION
Centralized Systems of Lubrication
3258 East 80th Street, Cleveland 4, Ohio
Affiliate of The Cleveland Worm & Gear Company, Industrial Worm Gearing.

If you write maker identify as IEN - 8481

NEED COPIES?
—produced in your own office

MODERN MIMEOGRAPHING — New equipment and supplies for the fast production of copies on a wide variety of paper and card stocks. A. B. Dick mimeograph products are for use with all makes of suitable stencil duplicating products.

MODERN SPIRIT DUPLICATING—Completely new A. B. Dick spirit duplicator produces 120 to 150 sharp copies a minute in 1 to 5 vivid colors from one master in one operation. Automatic feed—post card to legal size—16 lb. to 70 lb. stock.

MODERN OFFSET—A. B. Dick lithograph direct image plates and masters provide for (1) longer runs with sharp definition—(2) easier corrections — (3) more successful filing — (4) marked superiority in resistance to fingerprints.

(MODERN FOLDING—small, low-cost A. B. Dick electric folding machine saves time and money.)

Write Dept. IEN-53 for full information—or call the A. B. Dick Distributor listed under Duplicating Products in the classified section of your phone book.

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THE FIRST NAME IN DUPLICATING
A. B. Dick Company • 5700 Touhy Avenue • Chicago 31, Illinois

If you write maker identify as IEN - 8482

Fastest Torquer in the World!!

...the Amazing New PROTO Torque-Limiting Wrench with Automatic Release!

Vastly superior to old-fashioned torque-indicating types. Super-Fast ... Accurate ... Easy To Use ... Versatile ... Rugged ... Low-Priced ... Does Better Work

See and buy this great new torquer at your nearest PROTO dealer. Send for free folder (enclose 10¢ for 68-page catalog of *complete* PROTO line) to
PLOMB TOOL COMPANY
2271X Santa Fe Avenue
Los Angeles 54, Calif.

5381

SIX MODELS

Remember! PROTO means PROfessional TOols

PROTO TOOLS LOS ANGELES

Eastern Factory—Jamestown, N.Y.
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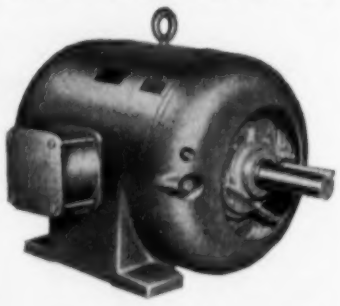
If you write maker identify as IEN - 8483

Where corrosion is a problem . . .

Where explosion might occur . . .



Wagner

Type JP Cast Iron Frame Motors

Wagner type JP cast iron frame motors are built for any application where corrosive or explosive condition might prevail. These rugged motors are totally-enclosed in corrosion-resistant cast-iron . . . are fan-cooled by an externally-mounted non-sparking bronze blower that forces air through ventilating passages in the frame. These motors feature completely protected laminations . . . special varnish treated windings . . . a running shaft seal . . . and an explosion-proof conduit box with machined fits. They are available in ratings from 2 to 250 hp, with normal or high torque characteristics. Ask for Bulletin MU-132 for complete information on these protected motors or consult the nearest of our 32 branch offices.

Wagner Electric Corporation Est. 1891

6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

M53-9A

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

If you write maker identify as IEN - 8484

NEW! FAST! EASY!

PRINT FACSIMILE LABELS DIRECT TO CONTAINERS

Here's the new system that eliminates labels and the old stencil board—ink brush method of addressing and marking shipping containers. With the new Web-O-Print JC-3 hand printer and a Kustom-Kut (die-cut) stencil, you can print both facsimile label and shipping information direct to cartons or boxes *in one operation* . . . at the rate of 40 to 50 cases per minute!

Kustom-Kut stencils are pre-cut to print your label or form. Address and other variable information are typed in . . . stencil is quickly attached to Web-O-Print . . . label and address are then printed on container in a single movement.

Web-O-Printing is a fast, clean one-hand operation. Prints on rough and cylindrical surfaces. Leaves a sharp, compact, fade-proof and waterproof print. Can be easily blocked out for re-shipping.

FREE SAMPLE PRINT Write today for a sample print and information on trial offer. No obligation.

Weber LABEL AND MARKING SYSTEMS
Division of Weber Addressing Machine Co.
Dept. IE-1, Mount Prospect, Ill.

If you write maker identify as IEN - 8485

CLEANING . . Degreasing machine combines immersion and vapor action

Source: PHILLIPS MFG. CO.
3461 W. Touhy Ave., Chicago 45, Ill.

The dirt drips off

Cool rinse, hot rinse and vapor degreasing are combined in this new double sump machine Model 100-CS. The machine will handle about 200 lb. of work per hr. in single pieces or in baskets of small parts.

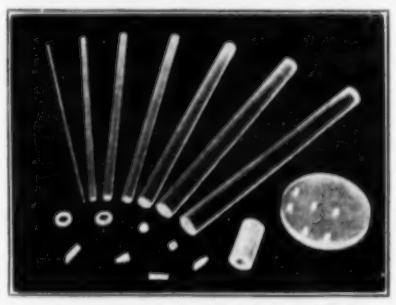
Solvent from the boiling sump fills the water jacketed vapor area above it. The vapor is condensed in a return trough that feeds back to the rinse sump. The boiling sump is fed, in turn, by overflow from the cool rinse sump. Distillation rate is 7 gph. based on 30 per cent contamination of the solvent.

Overall dimensions are 38 by 18 by 42 inches. Construction is in 14-gage steel, reinforced, welded and hot-dip galvanized. Heat is supplied by electric elements for operation on 110 or 220-volt single phase or on 220, 440 or 550-volt three-phase ac.

If you write maker identify as IEN - 8486

PLASTIC . . Heat hardening polymer, in rod form, can be machined like brass

Source: POLYMER CORPORATION
405 Walnut St., Reading, Pa.



Stiffer than Teflon

Coaxial spacers, antenna and stand-off insulators, coil forms, connector beads, are representative parts that can be machined from the new rod stock known as Polypenco Q-200.5. It is a rigid, clear, transparent heat hardening polymer with a dielectric constant of about 2.4. Heat distortion temperature is about 220 deg. F. at 264-lb. fibre stress per square inch.

The material can be drilled, milled, ground and polished, using tools sharpened to cut brass. The rod stock is available in ⅛ to 1-in. diameter and 6 to 8-ft. length. Shapes and other sizes are subject to special order.

If you write maker identify as IEN - 8487

Thirty-five sons and daughters of Allis-Chalmers people will be in college this fall under the company's scholarship plan. Eleven high school seniors were awarded new scholarships this year. The others received renewals of their previously awarded $500. Under the program it is possible for each student to receive $2,000 in educational assistance while completing four years of college study, providing he or she maintains given standards. A maximum of 40 scholarships is provided in the plan which is explained in a new booklet. Ask A. R. Tofte, Allis-Chalmers Mfg. Co., 909 S. 70th St., Milwaukee 14, Wis. for a copy.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8488

SPEEDY AIR VISE

SPEEDS UP

✓ MILLING ✓ PUNCHING
✓ DRILLING ✓ BENDING
✓ TAPPING ✓ RIVETING

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and *Fittings*.....only **$36.00**

Prompt Delivery from Your Supplier or Write Direct

W. R. BROWN CORPORATION • 2645 N. Normandy Ave., Chicago 35, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

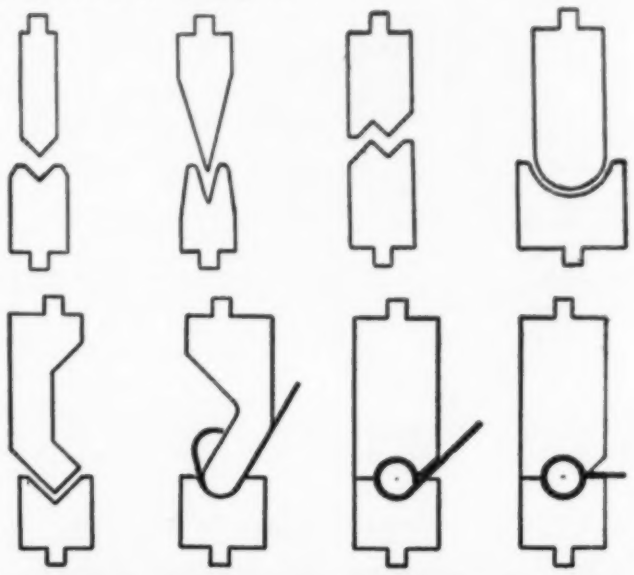
If you write maker identify as IEN - 8489

PRESS BRAKE FORMING DIES

PROMPT DELIVERY

Any Metal—any gage—to fit any make of machine

Here are a few examples:



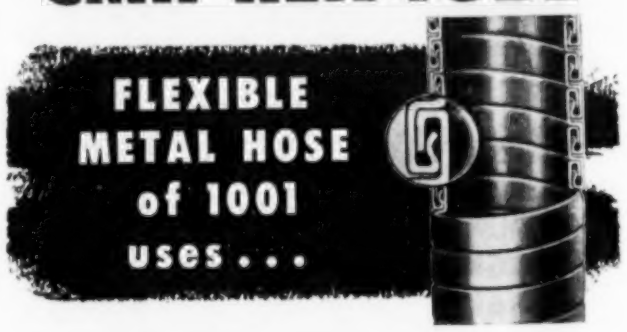
RAFTER MACHINE COMPANY, INC.
SINCE 1917

249 Stephens Street **Belleville 9, N. J.**

COLD ROLL FORMING MACHINES
AND GANG SLITTERS

If you write maker identify as IEN - 8490

CMH REX-TUBE



. . . for the practical handling of saturated steam, non-searching liquids or gases—substances such as tar, asphalt and petroleum products. It is also widely used for ducting, tubing and conduits. Rex-Tube absorbs vibration—expansion and contraction—misalignment. It combines the flexibility of hose with the durability of metal. Available in a wide range of sizes with fittings for your needs. Working pressures to 750 psi and temperatures to 1200° F. Write today for more information.

CMH

CHICAGO METAL HOSE
DIV. FLEXONICS CORPORATION
1333 S. Third Avenue, Maywood, Illinois
Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

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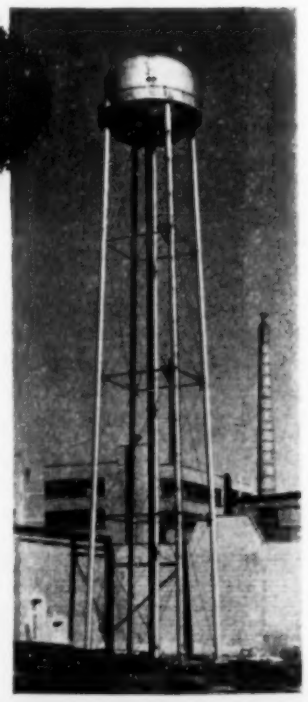
If you write maker identify as IEN - 8491

For Safety's Sake



Consider a Horton elevated water tank for your plant fire protection system. Assure yourself of an ever-ready water supply for fire protection twenty-four hours a day—seven days a week.

Horton ellipsoidal-bottom tanks are built in capacities from 15,000 to 500,000 gals. When requesting quotations, state capacity required, height to bottom, location, and type of insurance carried.

Right—75,000-gal. Horton tank built for the United States Tobacco Company at Chicago, Illinois. Schmidt, Garden & Erikson were the Architects and Engineers on this plant.

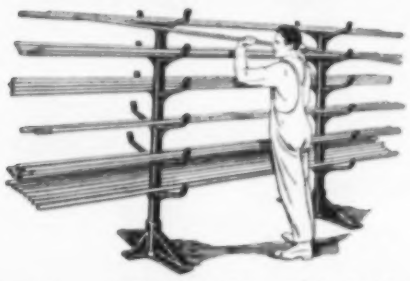
CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois

Atlanta • Birmingham • Boston • Cleveland • Detroit
Houston • Los Angeles • New York • Philadelphia • Pittsburgh
San Francisco • Seattle • Tulsa

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA

If you write maker identify as IEN - 8492

for EFFICIENT HANDLING and ORDERLY STORAGE



You save time, both in storing and in issuing, when you use Brown Sectional Racks. Open sides speed handling. Complete visibility permits quick selection to save waiting mechanics time.

Maximum flexibility in arrangement is possible because each Brown Rack is independent and self-contained, need not be bolted to floor. Easily relocated. Systemized storage with Brown Racks promotes good housekeeping, cleanliness.

All iron and steel construction, can't burn, bend, sag or warp. Never wear out.

Get these values now! Write for complete specifications and prices on wide range of models and sizes. Brown Engineering Co., 122 N. Third St., Reading, Pa.

BROWN QUICK-SERVE RACKS

If you write maker identify as IEN - 8493

HEAT FAST
HEAT CONTROLLED
HEAT EASY-TO-INSTALL
HEAT ECONOMICAL

Need heat for production or processing? Chromalox Electric Heaters are your quick and economical answer. Over 15,000 types, sizes and ratings to choose from to give working temperatures up to 1100°F. Temperatures controlled precisely by either manual or automatic thermostatic controls. No steam-lines, no boilers or expensive equipment to install!

WRITE FOR

Handbook "100 Ways to Apply Electric Heat." It suggests many applications for Chromalox Electric Heaters.

IB-37

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Chromalox Radiant Panels Advertisement, Page 5

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 8494

Write for New 16 Page Catalog

ONE MILLION RELAYS

Over 1000 Types

24 HOUR DELIVERY FROM OUR STOCK!

- Standard, Respected Brands
- Brand New, Boxed
- Inspected and Guaranteed
- Priced to Your Advantage

Our relay stock, which is the world's largest, has been carefully built up over a period of several years. Nothing but first run, professionally selected items are carried.

Send us your relay requirements. You will receive immediate quotations.

samples on request. *Phone, Wire or Write*

SEeley 8-4146

Relay Sales

4721 W MADISON STREET

DEPT. NO. 9 CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 8495

PRESS TOOLS . . Punch and die unit sets in multiple to template or layout

Source: GENERAL RIVETERS INC.
787 Hertel Ave., Buffalo 7, N. Y.

Special shapes also

Toolset trade names new self-contained punch, die, stripper and holder to mount singly or in multiple in a press. No connection is required with the press ram. Location is to a template or layout for the unit base. Alignment between punch and die are inherent in the assembly. Punching and notching units, the latter in both Open and Confined design, are included in the line.

Six sizes, for mild steel to 1/8 in. in thickness, Type PA, measure 1 to 3½ in. in width, 6 5/16 in. in shut height, 2 19/32 in. in die height. The smallest available in 4 and 8-in. throat, the largest in 6, 12 and 16-in. throat. The smallest takes maximum punch diameter of 11/32 in. and the largest takes punches to 2⅛ inches.

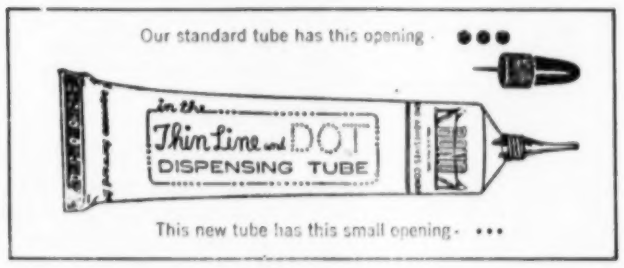
Three sizes, known as Type PAH, rate mild steel to ¼ inch. They measure 8⅜ in. in shut height, 3½ in. in die height, 6 and 12 in. in throat depth, 1¼ to 2¼ in. in width. They take maximum punch diameters of ½ to 1¼ inches.

The notching units are a combination of 90-deg. corner and Vee in Open design and a combination of 90-deg. corner, Vee and edge in Confined design. Punch sizes are 2 by 2 in., 3 by 3 in. and 5 by 5 inches. Shut and die height are the same as for Type PA and work thickness is to 1/8 in. in mild steel.

If you write maker identify as IEN - 8496

ADHESIVE . . In collapsible tube that dispenses thin line or tiny dots

Source: BOND ADHESIVES CO.
535-39 Johnson Ave., Brooklyn 37, N. Y.



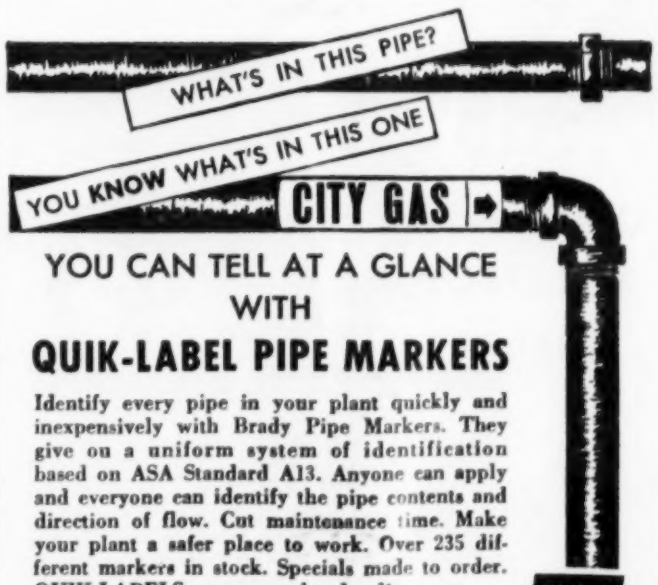
Technical data and prices on request

Six varieties of the company's lines of liquid and semi-liquid adhesives are now available in 1¾-oz. collapsible tubes fitted with a needle like tip measuring about ¼ in. in length. A continuous thin line or about 31,000 tiny dots of the adhesive can be delivered from each tube. There is no opportunity for the adhesive to clog or harden in the tip. As much or as little can be delivered as a given operation requires.

The available adhesives include transparent, water white, opaque standard and special materials for a range of applications on metal, glass, wood, felt, leather, paper, plastic. One of the materials will produce raised dots or lettering since it will not sag or self-level. Packaging is in individual units or in quantities of six dozen to a box.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8497



YOU CAN TELL AT A GLANCE WITH

QUIK-LABEL PIPE MARKERS

Identify every pipe in your plant quickly and inexpensively with Brady Pipe Markers. They give on a uniform system of identification based on ASA Standard A13. Anyone can apply and everyone can identify the pipe contents and direction of flow. Cut maintenance time. Make your plant a safer place to work. Over 235 different markers in stock. Specials made to order. QUIK-LABELS come on handy dispenser cards. They are printed in large black letters on approved ASA background colors. Applied in a jiffy — they stick without moistening. Use indoors or outdoors. Cost only a few cents per marker.

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DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

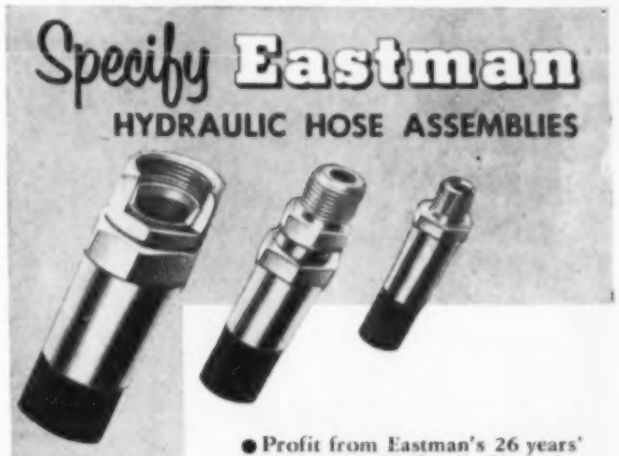
WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED ROLL TAPE · MASKS & STENCILS

MANUFACTURERS OF SELF-STICKING PRODUCTS

W.H. BRADY COMPANY

734 W. GLENDALE AVE. • MILWAUKEE 12, WIS.

If you write maker identify as IEN - 8498



● Profit from Eastman's 26 years' experience in Hydraulic Hose Assemblies. Pressed-on, re-usable and renewable couplings and insert type fittings for high and low pressure air, gas, water, paint, grease and hydraulic hose...from 1/8" to 2". Pressure lines up to 5000 psi. Also suction and low pressure units.

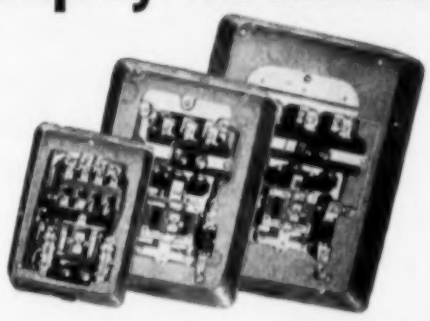
WRITE FOR COMPLETE CATALOG OR PHONE YOUR SPECIFICATIONS

EASTMAN MANUFACTURING CO.
Since 1914
Dept. IEN8, Manitowoc, Wisconsin

Eastman
first in the field
HYDRAULIC HOSE ASSEMBLIES

If you write maker identify as IEN - 8499

Compact motor starters simplify installation



The compact unit construction of Ward Leonard a-c across-the-line magnetic starters makes installation easy.

Complete accessibility of all parts simplifies inspection. They are designed with high current interruption capacity and for long, trouble-free operating life.

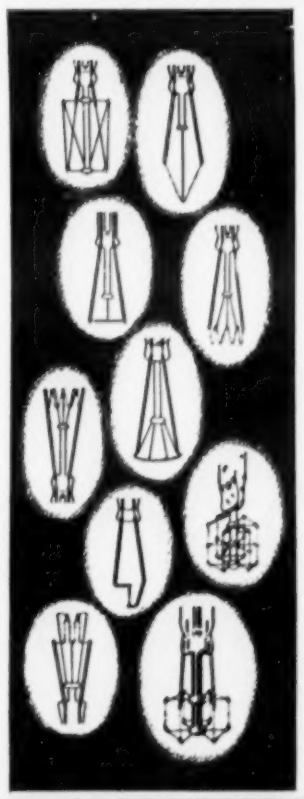
Open types for machine tool and panel builders or enclosed types as shown are available in seven NEMA sizes, from 1 to 200 hp. Order now for immediate delivery. Or write for Starter Bulletin 4110. Ward Leonard Electric Co., 33 South Street, Mount Vernon, N. Y.

WARD LEONARD ELECTRIC CO.

Result-Engineered Controls Since 1892

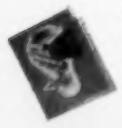
RESISTORS • RHEOSTATS • RELAYS • CHROMASTER

If you write maker identify as IEN - 8500



Filamentary Facts about CHAMPION LAMPS

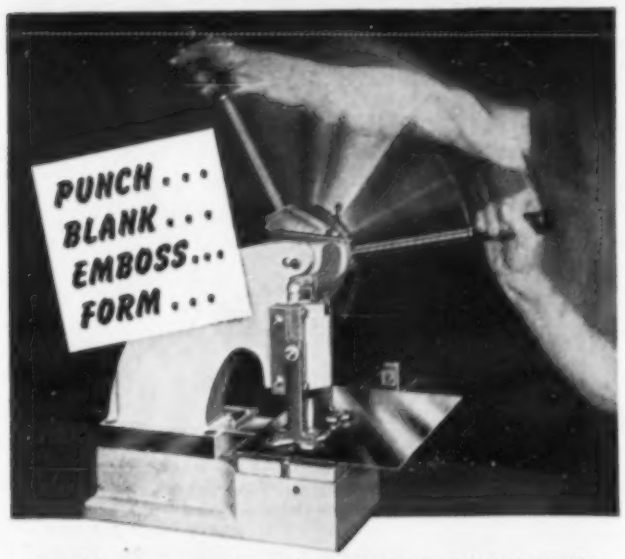
A 60 watt filament starts as a piece of tungsten wire 21 inches long, dia 2/5rds the thickness of this page Coiled 1200 times it becomes 3.4", coiled again, only 5/8" long. Working with wire so fine as to be almost invisible to tolerances measured in millionths, Champion experts produce filaments that cannot be surpassed in performance. Champion produces Lamps for industry that provide unsurpassed service and value. Get in touch with the Champion Lamp distributor near you for intelligent co-operation on your lighting needs.



New booklet, CHAMPION QUALITY (D), contains the interesting story on Champion Lamps for industry. Write for it.

CHAMPION LAMP WORKS
Lynn, Massachusetts
A DIVISION OF CONSOLIDATED ELECTRIC LAMP CO.

If you write maker identify as IEN - 8501



Quickly, Accurately with DI-ACRO* PUNCH PRESS

Deep throats—6 and 12 inches—of Di-Acro Punch Presses make them ideal for many operations impossible to perform on most bench presses.

Holes of various shapes and sizes—as large as 4" in diameter in 16 gauge steel—can be punched. Rated capacity, 4 tons. Also power models.

A wide variety of readily interchangeable punch press accessories are available for both production and experimental work. Punches are offered in round, square, rectangular and oval shapes.

*pronounced Die-ack-ro

SEND FOR 32-PAGE CATALOG
Creators of "Die-Less Duplicating"

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MANUFACTURING CO.
718 8th AVENUE • LAKE CITY, MINN.

If you write maker identify as IEN - 8502

The "214" automatically feeds, inserts and clinches two rivets at a time . . . with speed that may mean a big saving in your fastening costs. 14" throat makes large assemblies easy to handle. For up to 9/64" diameter steel rivets—lengths to ⅞". Quick Change Rotary Type Hoppers and Raceways permit a 5-minute changeover to rivets of different size. Adjustable anvils and riveting centers add to its versatility. Ask us how the "214" can help you cut costs. Send a sample of problem assembly (or blueprint) for Free fastening analysis.

FREE CATALOG
contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.

Chicago Rivet & MACHINE CO.
9602 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois
Branch Factory: Tyrone, Pa.

If you write maker identify as IEN - 8503

this book shows you how to

Reduce machine noise and vibration 60-85%.

Avoid floor drilling by mounting machines the modern way, without bolts or lag screws.

Reduce maintenance costs by eliminating transmitted vibration which damages machines, floors and buildings.

Save time and money when installing new machinery or repositioning present machinery.

Write today for your free copy of "Why It Pays To Anchor Your Machines With UNISORB."

THE FELTERS COMPANY
208 South Street, Boston 11, Massachusetts

UNISORB® MOUNTINGS are used with our special adhesive. UNISORB is also available precoated with adhesive, for use with machines that do not require shimming.

If you write maker identify as IEN - 8504

TRUCK . . Engine driven fork lift for outdoor operation on rough ground

Source: BAKER-LULL CORPORATION
312-16 W. 90th St., Minneapolis 20, Minn.

Forkloader Series 60N

Four-wheel drive, with the engine and ballast weights over the rear wheels, 23-in. oscillation of the rear axle and hi-flotation pneumatic tires suit this new truck for operation over rough ground, through sand, mud, snow. Wheelbase measures 100 inches. Load capacity is 3 ton. The transmission has 5 speeds forward and reverse.

Power is supplied by a Hercules gasoline or diesel engine rated at 94 or 77 hp., depending on the model specified. Load lift is by hydraulic pressure developed by a pump on the engine. Hydraulic cylinders control tilt to the back and front. Front or rear wheel steer, or both, are available in six models making up the line.

If you write maker identify as IEN - 8505

LADDER . . Wheel equipped step unit serves also as a load carrying truck

Source: FAIRBANKS COMPANY
395 Lafayette St., New York 3, N. Y.

It does two jobs

Step-Truk trade names this new combination of step ladder and two-wheel truck. It is fitted with a nose plate that rests securely on the floor when a user climbs on the steps. It tilts back to carry boxes, bags, cartons, from one location to another. It serves a combination duty for the mantenance worker to carry his tools and suppiles and provide a means to climb to locations above his normal reach. Construction is in formed and tubular steel in welded assembly.

If you write maker identify as IEN - 8506

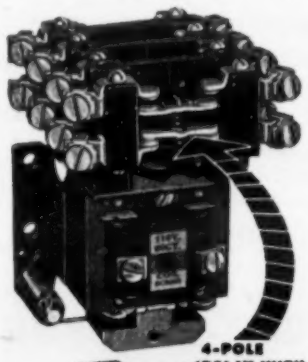
Some 800 executives, representing 300 companies, large and small have enrolled in the AMA Management Course since it was started in February 1952. Now the Association has published a new brochure on the subject. You can secure a copy by addressing Director, AMA Management Course, Hotel Astor, New York 36, N. Y.

The course consists of four basic units, each taking one week. These units are repeated nine times during the year starting with September 14 and ending on June 18, 1954. Subjects include all of the elements common to management activity, basic principles, skills, tools, planning and controlling, organization building, appraising results and taking action.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8507

Bulletin 700 UNIVERSAL SOLENOID RELAY



4-POLE RELAY WITH UNIVERSAL CONTACTS

Change from NORMALLY OPEN Contacts to NORMALLY CLOSED Contacts by Simply Shifting Connections

The Allen-Bradley Bulletin 700 universal solenoid relays are a new idea in relay design. The new dual contact arrangement permits quick change from normally open contacts to normally closed contacts by simply shifting connections . . . a simple and easy operation. Only ONE moving part. Rating of 10 amperes at voltages up to 600 volts. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wisconsin.

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

If you write maker identify as IEN - 8508

Puts Small Parts Shaping On A Truly Efficient Basis

Atlas

7" SHAPER

Are you shaping small parts on a big machine? The Atlas saves set-up time, and power — machines to close tolerances — and releases your big equipment for the work it's best suited to handle.

The Atlas is the only 7" shaper that is *Timken bearing equipped* — the only 7" shaper with *roller bearings on countershaft spindle, cast iron bull gear with 1" face,* and provision for *outside* stroke adjustment. Built exceptionally heavy and rugged. Has ground ways, 4 speeds, 5 reversible automatic power cross feeds. These are just the highlights of this fine shaper. Send for the catalog with full details.

SEND FOR FREE CATALOG

ATLAS PRESS COMPANY
807 NORTH PITCHER STREET
KALAMAZOO, MICHIGAN

Atlas DEPENDABLE QUALITY TOOLS SINCE 1911

If you write maker identify as IEN - 8509

Just 1/32" (pinhole size) faucet leak

MUSHROOMS into ATOMIC WASTE

of approximately 95,000 gallons of water yearly—costing:

$24.14

@ $1.90 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 95,000 gallons of water costs approximately:

$53.51 if coal (9579 lbs.)
$91.08 if oil (792 gals.)
$84.41 if gas (84,411 cu. ft.)

Above figures authenticated by Hackensack Water Co. and American Gas Association.

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with 'SEXAUER' "Easy-Tites" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D.

"EASY-TITE" Faucet washers

...a modern laboratory triumph, are compounded from du PONT NEOPRENE (tested up to 300°F.) instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day superheating water systems—that formerly broke down washer's structure.

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape...causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold FAUCETS—thus you slash water, fuel and labor costs.

THE NEW 'SEXAUER' CATALOG,
Edition G, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. *Send for your copy today!*

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and *without obligation.*

A postcard will bring him and your NEW Catalog promptly.

J. A. SEXAUER MFG. CO., INC., Dept. K-83
2503-35 Third Avenue, New York 51.

as advertised in THE SATURDAY EVENING POST

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as IEN - 8511

It's not new! For years American has used 3-D to simplify ordering drill bushings. American's original three dimension ordering plan; 1–I.D., 2–O.D., and 3–length, eliminates confusing code numbers...saves time, trouble!

Fully stocked distributors located in every major area throughout the U. S. You can get the right drill jig bushing when you want it!

Order American Drill Bushings the 3-D way... send for the new catalog with the KING SIZE selection of standard sizes.

AMERICAN DRILL BUSHING CO.
5107 Pacific Blvd., Los Angeles 58, Calif.

TRADEMARK

SPECIALIZING ONLY IN DRILL JIG BUSHINGS

If you write maker identify as IEN - 8512

Ever wonder why Tide Water formulates over 300 industrial lubricants? The answer can save you many hundreds of lost lubrication dollars! Because the problems of friction are varied . . . we believe that each job requires a *specialized* lubricant, an oil or grease specifically designed for peak efficiency . . . at lowest cost. And we're constantly on the lookout for formulas that do an even better job. That's why we say: When it comes to selecting the proper lubricant—be specific. Ask your local Tide Water representative for the *one* Tycol lubricant that's *engineered to do the job!*

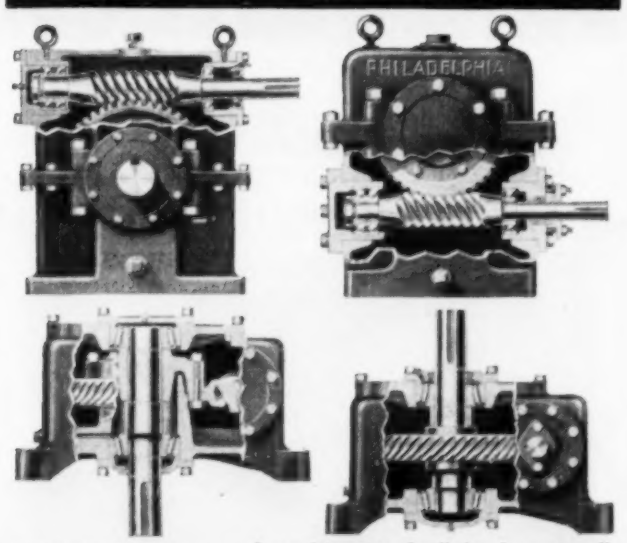
TYCOL INDUSTRIAL LUBRICANTS

TIDE WATER ASSOCIATED OIL COMPANY
17 BATTERY PLACE · NEW YORK 4, N. Y.

Refiners and Marketers of Veedol . . . The World's Most Famous Motor Oil

If you write maker identify as IEN - 8513

For Right Angle Drives
HORIZONTAL OR VERTICAL



PHILADELPHIA WORM GEAR SPEED REDUCERS

A complete range of unit sizes to cover applications from ¼ to 265 H.P. Ratios from 3⅝ to 1 to 6300 to 1. Our latest catalog WG-51 shows complete details. Please write on your business letterhead.

PHILADELPHIA GEAR WORKS, Inc.
ERIE AVENUE AND G STREET • PHILADELPHIA 34, PA.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON • LYNCHBURG, VA.

If you write maker identify as IEN - 8514

MARKING . . Electric etcher, transformer operated for free hand use

Source: H. P. PREIS ENGRAVING MACHINE CO.
145 Industrial Branch, Hillside 5, N. J.

For portable use

Model EM-60, rating 500 watts, and Model EM-120, rating 1,000 watts, are two new electric etchers for free hand marking on the surface of soft or hardened steels and ferrous alloys as well as on cast and wrought iron. The machine mounts a ten station rotary switch to set the action for light or deep impression into the work to meet requirements.

It is suited for use on gage blocks and precision parts that other types of marking could damage. Overall dimensions are 8¼ by 10 in. in width and height by 5 and 6¼ in. from front to back for the two models. Weights are 20 and 30 pounds. The pencil type marking head is cork insulated over a hollow ventilated sleeve.

If you write maker identify as IEN - 8515

WELDING . . Silicone compound seals the underside of a weld seam

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

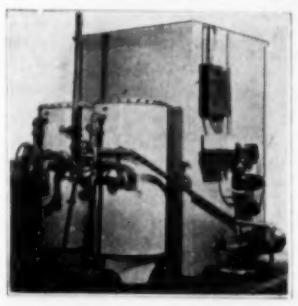
One pint covers 1,300 linear feet

One coat of this new fluid compound, applied like paint about ½ in. in width to the underside of an arc weld seam, shuts out air and promotes uniform arc penetration when the weld is being made. The fluid is based on silicone compound and is supplied ready to apply with a brush.

If you write maker identify as IEN - 8516

WATER TREATING . . Package plant, ready to connect, 500 to 3,000 gpm.

Source PERMUTIT COMPANY
330 W. 42nd St., Room 700, New York 36, N. Y.



For clean soft water

New conditioner is a ready-to-run assembly of precipitator with built-in cleanwell, proportioning chemical feeder control, coagulent feeder tank, lime or soda ash and hypochlorite feeder tank, inlet float control valve, Neutralite filter units, Carbo-Dur purifier units, and a service pump and motor. Eight sizes range from 500 to 3,330-gph. capacity.

Applications include removal of turbidity, color and organic matter, chlorinating, removal of bad tastes and odors, removal of iron and manganese, neutralizing, softening, de-alkalizing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8517

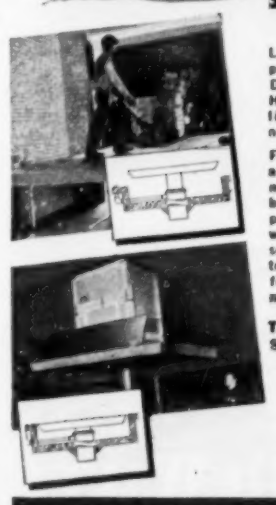
SAVE THE MAN IN MANUAL LABOR WITH Wayne LIFTS

SPEED PRODUCTION . . . SAVE LABOR . . . CUT HANDLING COSTS

Loading or unloading, just back up the truck . . . push the button . . . and the Wayne Loading Dock Ramp is adjusted to the correct height. Hand or industrial trucks roll on easily. No chain lifts, pry bars or costly manual lifting operations necessary.

From coast to coast Wayne is cutting loading time as much as 75% with Loading Dock Ramps saving miles of round-about hauling with cross-over bridges . . . speeding up inventory stocking with platform lifts. Wayne Lifts include ramps, sidewalk elevators, materials lifts, cross-over bridges, service lifts and others. Each custom-engineered to meet your plant's particular needs. Write today for the new folder on "LIFTronics . . . science of materials handling."

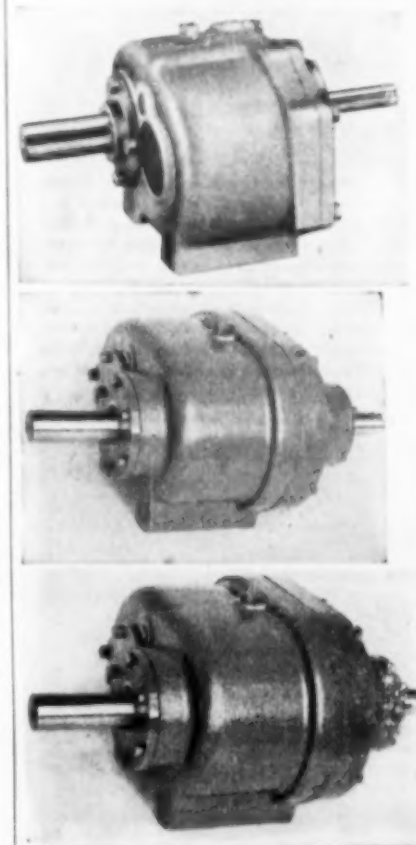
THE WAYNE PUMP CO.
Salisbury, Md. • Toronto, Can.



Wayne NATION WIDE SERVICE

WAYNE LIFT DIVISION, Salisbury, Md.

If you write maker identify as IEN - 8518



2 *speed automatic transmission*

13800 (1-5 H.P.)
5 H.P. capacity with input speed of 900 r.p.m. Maximum Reduction 6.3:1

14100 (5-20 H.P.)
20 H.P. capacity with input speed of 900 r.p.m. Maximum Reduction 6.3:1

15000 (20-50 H.P.)
50 H.P. capacity with input speed of 900 r.p.m. maximum Reduction 6.3:1

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up to 100 h. p. For Motorizing Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Broaches, Bolt Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.

WESTERN TRANSMISSIONS
WESTERN MANUFACTURING CO. — 5450 SCHOOLCRAFT — DETROIT, MICHIGAN

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Get big truck lift . . . with small truck thrift . . .

YALE *WORKSAVERS*

Smaller in size...lighter in weight...lower in cost

YALE WORKSAVER ELECTRIC TRUCKS are the perfect solution where plant and warehouse facilities...or limited budgets ...had previously ruled out mechanical handling operations. YALE WORKSAVERS lift, move and stack materials over low-load flooring...unreinforced ramps and elevators...freight cars and trucks...save time, space, manpower and money. Industries of all kinds choose YALE WORKSAVERS because they know the YALE name and reputation. They count on the versatility of WORKSAVERS...to do the job better, more economically. Contact your local YALE Representative or complete the coupon for a demonstration. Ask about the complete range of attachments that makes the WORKSAVER the most versatile tool in your plant.

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MATERIALS HANDLING EQUIPMENT

**Registered in U. S. Patent Office*

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Please have your local representative call for an appointment.

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In Canada write: The Yale & Towne Mfg. Co., St. Catharines, Ontario, Canada

Gas, Electric, Diesel Lift Trucks • Worksavers • Hand Trucks
Hand and Electric Hoists • Pul-Lifts

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Rolling Steel Doors

Manually, Mechanically, or Power Operated

Below you see Mahon Power Operated Rolling Steel Doors installed in six truck openings to a motor freight loading dock. Another Mahon Power Operated Rolling Steel Door 17'-0" x 22'-0" is installed in a railroad opening in connection with this same loading dock. Rolling Steel Doors occupy no usable space either inside or outside the opening . . . they create no overhead obstructions—cranes may be employed to handle materials adjacent to the door opening. Quick opening, quick closing, vertical roll-up action saves valuable time . . . all-metal construction provides permanence, greater protection against intrusion and fire, and assures you a lifetime of trouble-free service. Write for Catalog containing complete information including Specifications.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

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WEBB TOWVEYOR*

for FASTER, EASIER and SAFER MATERIALS HANDLING

FASTER—Towveyor chain automatically picks up load when pin attached to truck is dropped into slot. Material is delivered to destination without wasted traveling time.

EASIER—Minimum handling of loads by personnel—trucks engage Towveyor chain or are disengaged at any point with a simple lowering or raising of towing pin.

SAFER—Clear floors with no obstacles for employees to walk or truck over, and there are no overhead chains or supports to present safety hazards.

Cut your handling costs with a "Towveyor" system that will speed up distribution, permit faster filling of orders and easier loading or unloading of freight cars and trucks.

*TOWVEYOR is a registered trademark identifying floor truck conveyors manufactured and installed by the Jervis B. Webb Company

For Further Information, Please Write To:

JERVIS B. WEBB COMPANY
8915 ALPINE AVE.
DETROIT 4, MICH.
OFFICES IN PRINCIPAL CITIES
CONVEYOR ENGINEERS AND MANUFACTURERS

If you write maker identify as IEN - 8523

STOP DUST

INSTANTLY with DUSTKOP

DUSTKOP 1400 cfm.

DUSTKOP 3600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

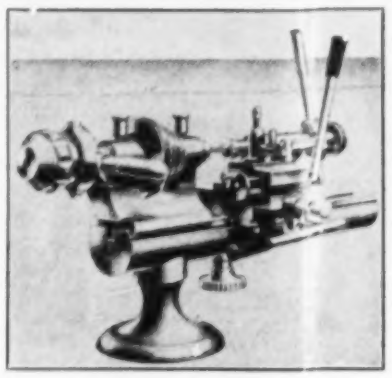
Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

If you write maker identify as IEN - 8524

LATHE . . Precision bench machine rides spindle on hardened steel bearings

Source: HENRY PAULSON & CO.
129-33 S. Wabash Ave., Chicago 3, Ill.



Details on request

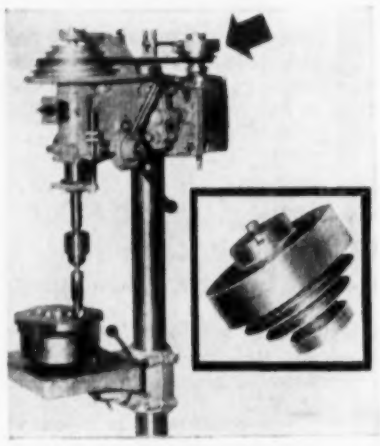
Supreme trade names the company's precision bench lathe. It has been on the market for some time for use by watchmakers, instrument makers and for small tool and parts manufacture in which precision is a requirement. New attachments have been added recently to include a turret tailstock that takes four 6-mm. wire chucks. The lathe swings 100 mm. over the bed. The drive calls for a 0.1-hp. motor.

Features in the construction include three circles of index holes in the head stock sheave face, tapered hardened steel bushings to support the spindle, and a wide choice of carriage and tailstock attachments for various purposes.

If you write maker identify as IEN - 8525

DRIVE . . Speed reducer sheave adds three speeds on drilling machine

Source: PULL-GEAR CO.
4116-20 E. 8-Mile Road, Detroit 34, Mich.



Takes Type B belt

One assembly is now available, in place of three, to fit ½, ⅝ or ¾-in. motor shafts in the Pull-Gear sheave previously described IEN-13282-52. This one unit is employed directly on a ¾-in. shaft. It is bushed for the other two sizes.

In effect, the unit places a "back-gear" in the drive between the motor and the machine spindle, when a selector on the upper face is turned, for direct or reduced speed operation. The reduction ratio is 7 to 1. Overall speed range is approximately 45 to 2,000 rpm. with a standard ½-hp. motor.

If you write maker identify as IEN - 8526

Outside diameter is 0.0455 in. and wall thickness is 0.00225 in. in a titanium tube that Superior Tube Co., 1515 Germantown Ave., Norristown, Pa., has succeeded in drawing. It is being used for experimental work in electrical, electronic and chemical plants.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8527

"AMF DeWalt is the *One-Machine* answer to our maintenance problems!"

says E. W. Hatchell, Shop Foreman, Miller & Rhoads Department Store, Richmond, Va.

"De Walt® makes it easy to meet our day-to-day maintenance needs. It's ideal for anything that comes up. That includes general fixture work; making flooring, shelving, crating; making or repairing office furniture."

You'll find De Walt brings amazing versatility to your plant maintenance operations, too. It makes many cuts—cross-cut, rip, bevel, miter, dado, shape, rout and others. And it's fast, accurate, safe.

Send for catalog to De Walt, Inc., Dept. IEN-8, Lancaster, Pa.

amf products are better...by design
AMERICAN MACHINE & FOUNDRY COMPANY

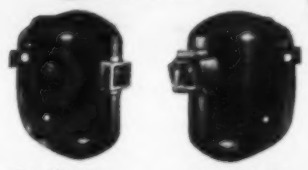
De Walt Inc. amf Lancaster, Pa.

DE WALT
POWER SAWS

If you write maker identify as IEN - 8528

CESCO RIGHT... before your Eyes!

NEW!



No. 401-7F with Stationary Lens Holder

No. 401-2F with Lift-Front Lens Holder

FIBER GLASS WELDING HELMETS

• Not affected by heat or moisture. Won't warp or buckle. Moulded under great pressure into a strong, tough one-piece shell with high heat insulating qualities.

CESCO Fiber Glass Welding Helmets are light in weight, have formfitting headgear, easily adjusted leather sweatband. They're—*"Right . . . before your Eyes."*

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If you write maker identify as IEN - 8529

ONLY

THRIFTMASTER Universal Joint Type DRILL HEADS

have these exclusive* features

6 Standard Models
Models U-608 and U-1000—Ball Bearing
Models U-620B and U-1012B—Plain Bearings, 11/16" or ½" min. centers
Models U-608-BS and U-1000-BS—Ball Bearing Gear Case, Plain Spindles

Semi-Standard Heavy Duty Full Ball Bearing
½" in Cast Iron—1 7/16" min. centers 7⅛" or 9⅜" Dia.
½" in Steel—1 13/16" min. centers 7" or 9⅜" Dia.
Also Larger Adaptations and Full Line of Fixed Center Drill Heads.

• Standard Full Ball Bearing Construction, including Spindles.
Driving assembly in *Full Ball Bearing* mounted with 3 Bearings on each spindle. Thrust load carried by radial thrust bearings.

• Standard Slip-On and Slip-Off Template Construction
For accurate setting and locating spindle brackets are machined to receive slip-on and slip-off template.

WRITE FOR FULL INFORMATION

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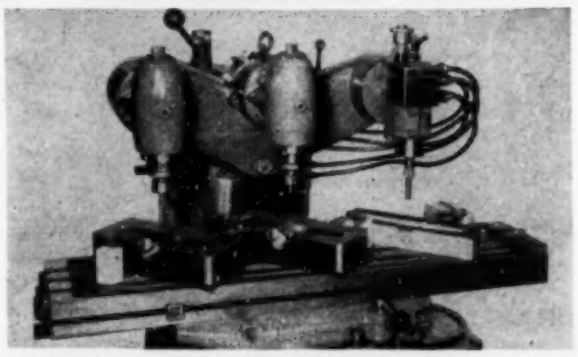
Subsidiary of Thomson Industries, Inc.
1040 N. Plum Street, Lancaster, Penna.

Also Makers of
DORMAN AUTOMATIC REVERSE TAPPERS

If you write maker identify as IEN - 8530

Turchan has what industry needs in the trend to *Automation* with TRACER-CONTROLLED machine tools



- Standard or special machine tools go automatic
- Produce more work, faster, at repetitive accuracy
- Simplify difficult jobs, reduce set-up time
- Eliminate rejects, force down production costs

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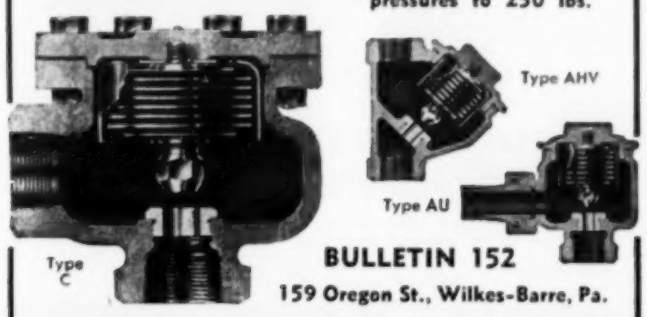
8259 LIVERNOIS AVENUE • DETROIT 4, MICHIGAN

If you write maker identify as IEN - 8531

Nicholson Steam Traps

CUT HEAT CYCLE from 45 to 27 min.

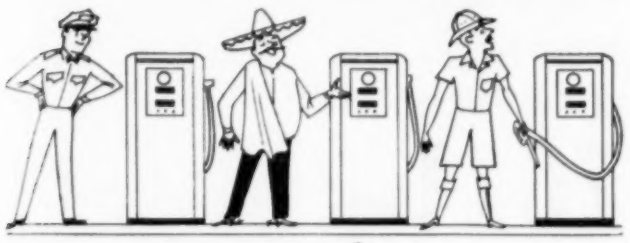
"One of the best savings we've made in some time", stated the plant engineer of a large mid-west processing plant after Nicholson thermostatic steam traps replaced mechanical units, cutting average heating cycle of important equipment 40%. Credit is given the higher, more even temperatures Nicholson traps effect. 2 to 6 times average drainage capacity. See why leading plants are increasingly standardizing on Nicholsons for faster heat transfer. 5 types: sizes ¼" to 2"; pressures to 250 lbs.



BULLETIN 152
159 Oregon St., Wilkes-Barre, Pa.

W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS

If you write maker identify as IEN - 8532

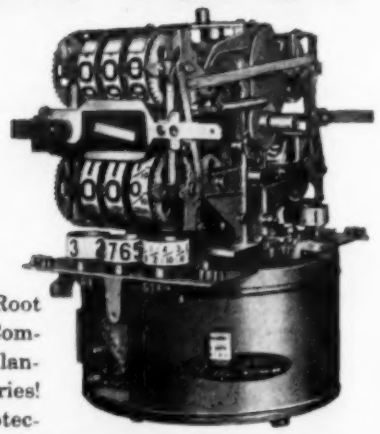


It Computes the Cost of Gasoline Pumped... in All of the World's Currencies

Added Evidence that

Everyone Can Count on

VEEDER-ROOT



Yes, this Veeder-Root Gasoline Pump Computer speaks the languages of 144 countries! It's the modern protection given you by gasoline pump manufacturers, gasoline refiners and their service-station outlets *. . . to make sure you get full measure in your tank, and the right change in your pocket* (or you can buy in "even money"). And what's more, it underscores the fact that "Veeder Root Counts Everything on Earth" . . . electrically, mechanically or manually. What's *your* counting problem?

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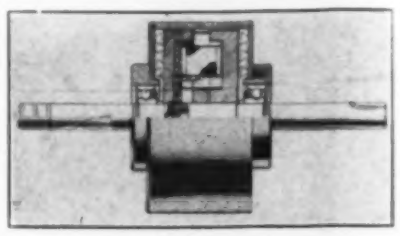
"The Name That Counts"
HARTFORD 2, CONNECTICUT
Chicago 6, Ill. • New York 19, N. Y. • Greenville, S. C.
Montreal 2, Canada • Dundee, Scotland
Office and Agents in Principal Cities

"Counts Everything on Earth"

If you write maker identify as IEN - 8534

DRIVE . . Magnetic clutch employs coil and stainless steel powder

Source: CLARK MFG. CO.
1834 E. 38th St., Cleveland 14, Ohio



Positive torque control

Smooth engagement, driving torque in proportion to the current in the actuating coil and suitability for use as a clutch or brake characterizes this new design of the company's Dynamic Drive. Input and output shafts are assembled in ball bearings in the housing to carry driving and driven plates. Between them is an electromagnetic coil and a filling of stainless steel powder and dry lubricant.

The metal particles polarize and bind together to connect the plates when current is applied in the coil. Release is instant when the coil circuit is opened. Three sizes, with housing diameter at about 3¾ to 7½ in. and overall length at 9⅝ to 12⅛ in., rate to 60, 200 and 500 in. lb., with 24-volt input at 0.34, 1.2 and 1/9 amp. Maximum heat dissipation for constant slip service, without special cooling, is 0.15, 0.30, 0.45 hp.

If you write maker identify as IEN - 8535

HOSE . . Heavy duty oil resistant, serves pneumatic tools, to 400 pounds

Source: B. F. GOODRICH CO.
448-52 S. Main St., Akron 11, Ohio

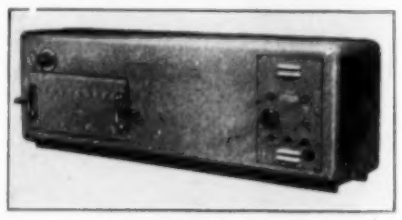
Three sizes are ½, ¾, 1 inch

Lubricant can be fed to pneumatic tools with the compressed air through this new Commander hose. It is made with an oil resistant tube, a single braid of steel wire and a light gray oil resistant cover. Applications are on construction, in mines, quarries and in industrial plants where abrasion is a factor in service life of the hose.

If you write maker identify as IEN - 8536

TESTING . . Ambient chamber to temperature test small components

Source: STATHAM LABORATORIES INC.
12411 W. Olympic Blvd., Los Angeles 64, Calif.



Mounts on table

Dry ice, to pull temperature down as far as minus 65 deg. F., and electric elements to raise it to 275 deg. F., are employed in this recently improved Model TC-1 temperature test chamber. Overall dimensions are 48 by 12 by 16½ inches. Work is inserted in the small test compartment back of the clamping door near one end. The equipment includes a motor driven blower for forced circulation, a thermometer and a thermostat, the latter to balance heating against the action of the evaporating ice.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8537

ATTENTION: Plant Safety Engineers

Here's How *YOU* can Prevent Production Losses Caused by Dermatitis

. . . Reduce Medical Costs and Improve Industrial Relations

Dermatitis actually wastes *more* man hours and medical treatment dollars than the more sensational industrial "accidents".* Furthermore, dermatitis cases cause revulsion, not only among afflicted employees, but their co-workers as well.

You can prevent these distasteful situations by providing the *proper* protective garments and *insisting* that personnel in your plant always wear them when in contact with irritating substances.

Gloves are especially important in reducing dermatitis cases and your production managers will thank you for choosing the *right* gloves for each job. Comfortable fit, hand freedom and long wear pay off in employee good will, increased production and lowered operating costs.

PIONEER liquid-tight Stanzoil® gloves, made of oil and acid resistant non-allergic DuPont milled neoprene, are reducing hand dermatitis hazards in hundreds of plants all over the world. 32 safety styles, weights, size and colors . . . PIONEER catalog shows you *at a glance* how to choose the most efficient and economical glove for the job.

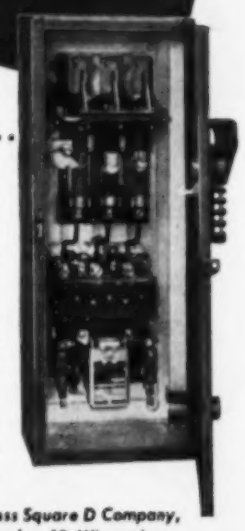
Don't risk costly time out — write for complete information today.

**Occupational Hazards, December, 1952*

Industrial Products Division
The PIONEER Rubber Co. 235 Tiffin Road Willard, Ohio
Quality Gloves for 35 Years

If you write maker identify as IEN - 8538

for GREATER SAFETY & LONGER STARTER LIFE



THIS SQUARE D *COMBINATION STARTER...*

• You save time and money when you install one device instead of two. You save mounting space, too. And you have a neater, more compact installation.

Square D's Switch gives you no less than eight design features which provide plus performance and operator safety.

Square D's Starter design provides quicker, easier maintenance and exceptionally long life.

Write for Bulletin 8538. Address Square D Company, 4041 N. Richards Street, Milwaukee 12, Wisconsin

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SQUARE D COMPANY

If you write maker identify as IEN - 8539

DESIGN IDEAS FOR YOU

in every issue of the

"NEOPRENE NOTEBOOK"

New products made of neoprene, Du Pont's versatile chemical rubber.

New engineering developments showing neoprene's wide range of applications.

Performance data proving neoprene's superiority in the field.

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Better Things for Better Living ...through Chemistry

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NEOPRENE

The rubber made by Du Pont since 1932

If you write maker identify as IEN - 8540

cable problem:

ACID?

No problem here — Okolite-Okoprene cables with an Okonite-designed neoprene sheath reduce electrical breakdown caused by acid fumes, wastes and soils. In sulphuric acid battery electrolyte at a temperature of 160° F., an Okoprene cable jacket was still in good condition after immersion for 21 months.

In Okolite-Okoprene cables both insulation and sheath are applied by Okonite's strip insulating process and vulcanized in a metal mold for greater stability and longer life. Available in all sizes and designs.

Full details in Bulletin IE-53

For your copy, write to The Okonite Company, Passaic, N. J.

OKONITE insulated wires and cables

1671

If you write maker identify as IEN - 8541

We SPECIALIZE in PISTON RINGS

will give you

1 · QUALITY RINGS
2 · GOOD SERVICE
3 · ATTRACTIVE PRICES

Hundreds of firms have been using Auto-Diesel Piston Rings for years, as original equipment and for replacement in compressors, hydraulic cylinders, valves, etc. Since 1921, we have specialized in small quantities up to 35" diameter. We are set up for small runs and can supply quality rings at attractive prices.

PRECISION PARTS and RINGS

Auto-Diesel hardened steel rings are doing a remarkable job on die casting machines. One concern used our rings four months without a shut-down due to ring failure. Also make rings, gaskets and other circular parts for marine, aircraft, locomotive, hydraulic, compressed air, steam and refrigerator machinery. We specialize in precision parts and rings for the aircraft industry. Consult our Engineers on any ring problem. Write today for information.

Write to

THE AUTO-DIESEL PISTON RING CO.
3139 Superior Avenue • Cleveland 14, Ohio
"RINGS and SHAPES *Since* 1921"

If you write maker identify as IEN - 8542

NOW... A POLISHER THAT'S UNIVERSALLY ADJUSTABLE

Built for use with the Vonnegut Brush-Backed Polishing Head, this unique tool is designed for sanding, smoothing or finishing contoured patterns — such as mouldings and formed or extruded shapes.

The brush bristles of the head automatically force abrasive strips to conform with and follow the shape of the pattern. The unique spindle stand (adjustable to any angle through 180° from vertical to vertical with head below or above the motor) makes it possible to bring the Vonnegut head into proper relation with a vertical, horizontal or angled surface of any pattern.

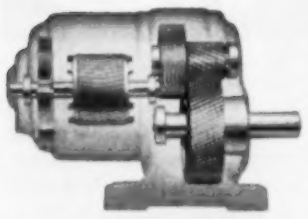
Don't hold back. Tell us about your finishing problems; we MAY have the answer to cutting YOUR costs.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
2530-D WINTHROP AVE., INDIANAPOLIS 5, U. S. A.

If you write maker identify as IEN - 8543

CANNING COMPANY CUTS COSTS WITH SLO-SPEED

Plant Supt., V. Rubino, reports that San Jose Canning Co. has effected many plant economies resulting from the following advantages of Slo-Speeds . . . Slo-Speeds provide the gear reductions required by our machinery . . . they require less mounting space and allow easier installation of other equipment in the line . . . totally enclosed gearing eliminates corrosion of outside bearings, gears and shafts exposed to steam and water . . . Slo-Speeds permit easier, more systematic lubrication, require less maintenance.



STERLING SLO-SPEED OUTSTANDING FEATURES:

Simplified gear system—balanced design—compact—rugged — highly efficient — abundant lubrication—low output shaft—positive oil seals — Herringbone Rotor — protected — streamlined — direct through ventilation — quiet operation — AGMA speeds — extremely long life — every unit will operate in any position.

20-page illustrated catalog . . . Sterling Speed-Trol, Slo-Speed, Klosd and Klosd-Tite Electric Power Drives. Write for catalog No. 1-D-422.

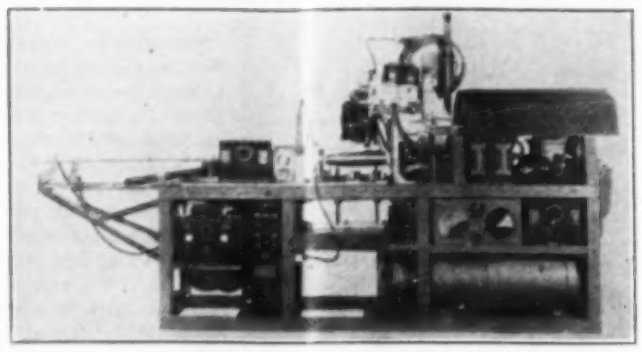
STERLING ELECTRIC MOTORS

Plants: New York City 51; Chicago, Ill.; Los Angeles 22; Hamilton, Canada; Santiago, Chile. • Offices and distributors in all principal cities.

If you write maker identify as IEN - 8544

WELDING . . Automatic arc machine to deposit metal on cylindrical work

Source: MORLEY MACHINERY CORP.
1237-41 University Ave., Rochester 7, N. Y.



Work rotates in adapters

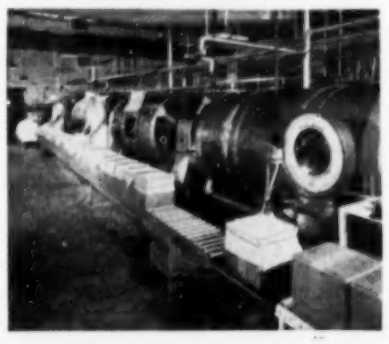
Diameters can be built up, cylindrical work can be hard faced, artillery shells can be "banded" with this new Model-F universal arc-welding machine. It feeds a steel, iron, copper wire electrode to specification, on the work while the latter is rotating. Feed is from a wire reel. Arc current is supplied by a welding generator built into the base.

Capacity is for work ranging from 2 to 6 in. in diameter and 6 to 25 in. in length. Shells can be banded that range from 75 to 155 mm. Other sizes can be specified for special construction. Compressed air or water cooling is provided to synchronize with the operation.

If you write maker identify as IEN - 8545

CONVEYING . . Roller equipment employs corrosion proof nylon bearings

Source: METZGAR COMPANY
417 Douglas St. N. W., Grand Rapids 4, Mich.



Trade named Nylo-Roll

Zinc coated rolls, 2 in. in diameter, are fitted with stainless steel shafts and nylon bearing bushings in this new corrosion proof conveyor. It is available in gravity or live roll design in 11½, 15, 18, and 24-in. widths and in specified length. The live assemblies are equipped with standard geared head motors for operation on 110-volt or 220/440-volt ac.

If you write maker identify as IEN - 8546

Dillon dial scale and a crane shaped tubular arm make a new combination for application on a fork lift truck. Loads can be suspended from the scale and weighed as they are being handled from one point to another. The scale, or Weight Indicator, as it is called by W. C. Dillon, 14620-K Keswick St., Van Nuys, Calif., measures 16 in. in diameter and is fitted with a ball bearing swivel hook and a tare adjustment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8547

A PAID NEWS ADVERTISEMENT BY MATHEWSON MACHINE WORKS

NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ¼" to 1¼", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to 2½" diameter, one for 2½" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carries hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to: **Mathewson Machine Works,** 26 Hancock Street, Quincy, Mass.

If you write maker identify as IEN - 8548

FOR BETTER HANDLING

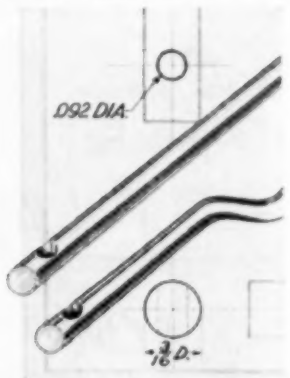
Look under "Trucks" or "Casters" in your classified phone directory for your nearest Nutting representative. Or write direct for Junior Catalog 52G.

SINCE 1891 **Nutting TRUCK & CASTER CO.**
2014 Division St. Faribault, Minn.

Export Sales Representative Scheel International Inc.
4237 North Lincoln Avenue • Chicago 18, Ill.

If you write maker identify as IEN - 8549

GEMCO mfg. co. increases production 70 to 1 with pivot punches



Mr. Gerard J. Mauro, President of Gemco Manufacturing Company of Southington, Connecticut, a leading producer of Metal Stampings and Wire Forms, says: "We are perforating C.R.S. Basic wire, 3/16 dia. with Straightground Whip-sleeved Pivot Punches of .092 dia. Although this exceeds a 2-to-1 ratio the Pivot High Speed Steel Punches are giving us runs of 35,000 where our own punches achieved maximum runs of only 500. The price of the punches is actually less than our own cost to manufacture."

For higher production, longer punch life, greater accuracy and punching power put Pivot Punches to work for you. WRITE FOR FREE CATALOG with standard punch prices. DEPT. I. N.

Tondra-treated FOR EXTREME HARDNESS

pivot punch and die corp.
NORTH TONAWANDA, N. Y.

Sturdy, Strong, Band-Saw Guide

MODEL 20

Paddock BALL-BEARING **BAND SAW GUIDES**

A sturdy guide that lasts for years, MODEL 20 is designed to work above or below saw table. Cut-out section of illustration shows V-shape groove of thrust wheel. Interchangeable ball-bearing wheels turn with blade and give greater ease for cutting and better adjustment to thrust wheel for ⅛ to 1" wide blades. Saves money on blade breakage. Models for large or small machines. Write for complete details. Give size, make of machine on which guide will be used.

SHIPPED ON APPROVAL WHERE VALUE IS QUESTIONED

PADDOCK TOOL COMPANY
Guide Makers Since 1920
1418 Walnut Street • Kansas City, Mo.

If you write maker identify as IEN - 8551

ONE OF AMERICA'S BROADEST LINES OF HORIZONTAL ALL-PURPOSE PUMPS

PEERLESS PUMPS

OTHER PEERLESS TYPES:
Fractional hp close-coupled
Integral hp flexible-coupled or V-belt drive

Close-coupled & flexible-coupled pumps ¼ to 150 hp—up to 5500 gpm

Write today for Peerless Bulletin No. B-2300. Illustrated with views of all pumps in the Peerless Fluidyne line. Includes sectional drawings, elevations, dimensional data and head-capacity characteristics. You can buy and apply right from this bulletin.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

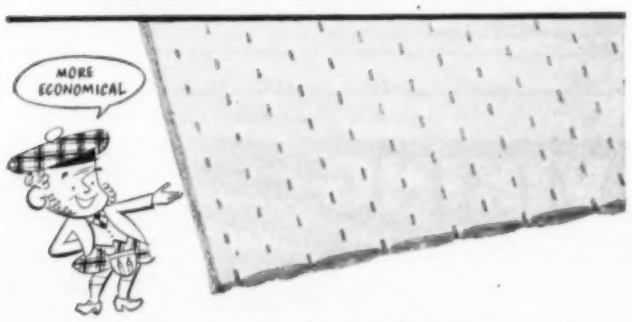
Los Angeles 31, California and Indianapolis 8, Indiana
Offices: New York, Chicago, St. Louis, Atlanta; Dallas, Plainview and Lubbock, Texas; Fresno, Los Angeles; Phoenix; Albuquerque, N. M.; Tulsa

If you write maker identify as IEN - 8552

Announcing
A new superior interior packaging at the price of ordinary materials

"Standard" KIMPAK Type 301

The new economical, general-purpose interior packaging material



Now — the unmatched protection of KIMPAK* at a price that challenges low-cost materials. That's the remarkable advantage of new "Standard" KIMPAK—Type 301!

And this latest addition to the KIMPAK line is designed with these general-purpose features to meet your particular needs:

- Complete range of standard thicknesses
- Widest selection of standard backing papers
- Plain or embossed at the same low price
- Available in rolls or sheets
- Widths from 2" to 60"

No other interior packaging material compares with New "Standard" KIMPAK 301. To convince yourself, contact your KIMPAK distributor or write for samples and complete information. Dept. P-83, Kimberly-Clark Corp., Neenah, Wisconsin.

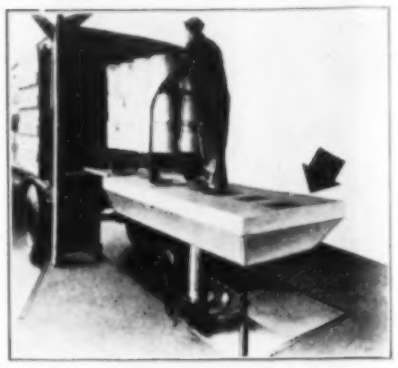
KIMPAK INTERIOR PACKAGING
*T. M. REG. U. S. & FOREIGN COUNTRIES

A Product of Kimberly-Clark

If you write maker identify as IEN - 8554

ELEVATOR . . Motor driven hydraulic, switch control, for shipping platform

Source: FIELD ENGINEERING CO.
64-68 Foote Ave., Dept. IE, Jamestown, N. Y.



Self-actuated

Four switches are connected into the motor circuit and the solenoid valve release circuit for the hydraulic equipment in this new Load-O-Matic shipping platform elevator. They control the elevator movements without need for operator attention. The elevator operates in connection with load movements on and off its 8½ by 4-ft. top to load and unload motor vehicle trucks that stand within its 30-in. vertical range. Local capacity is 3 ton. Lift speed is 3 ips.

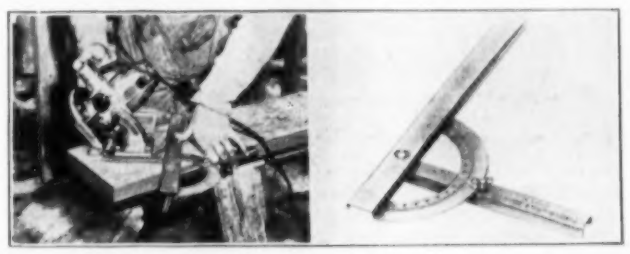
A loaded or empty truck is moved onto the platform, as it stands flush with a shipping platform, until the truck wheels contact a switch bar. This bar moves forward under wheel pressure to close a switch circuit to the pump motor and the platform rises. A hinged leveling ramp, held in vertical position by guides while the platform is at the bottom of its movement, begins to hinge forward until it comes to rest in horizontal position on the floor of the motor vehicle.

At this point it operates a second limit switch to open the motor circuit and bring the platform to rest flush with the truck body. The industrial truck is then moved into the vehicle body, the elevator standing in stationary position until the loaded or empty truck is returned to again strike the switch bar and operate a third switch that opens the solenoid valve controlling oil release from the pressure cylinder. The elevator then moves down until a fourth limit switch at the rear end contacts a stop to close the solenoid valve and bring the elevator to rest flush with the shipping platform.

If you write maker identify as IEN - 8555

GAGE . . Guide protractor aligns saw for angle cutting

Source: PORTER-CABLE MACHINE CO.
21 Exchange St., Syracuse 8, N. Y.



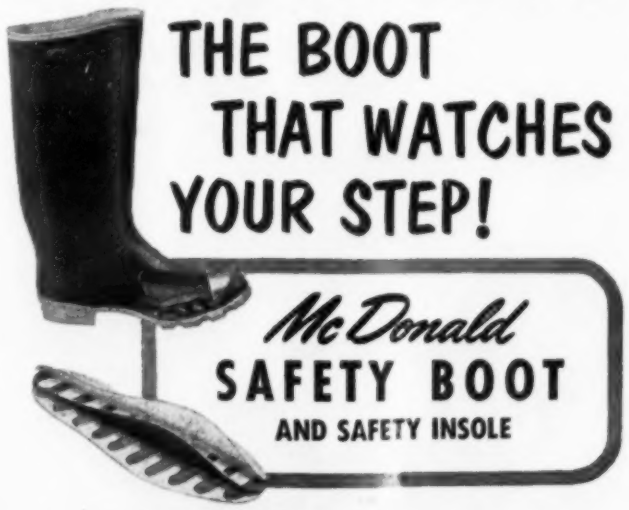
List is $4.25

Formed steel gage provides a convenient and accurate means to set up an aligning guide for a portable electric or hand saw to cut wood at desired angles. The guide side measures 19 in. in length. Both parts of the frame are made of channel sections to provide rigidity. A wing nut and pointer sets and holds the desired angle. Readings are to 75 deg. on either side of zero. The unit is known as 25Y-K75.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8556

THE BOOT THAT WATCHES YOUR STEP!



Feet never get careless with this protection! Made of finest quality rubber, McDonald Safety Boots have a built-in flexible insole of overlapping steel strips that stop the sharpest spike! Steel toe cap is most successful ever devised. Safety Insole may be ordered separately for insertion in any type of rubber boot. Boots and Insoles in sizes 6-12. No half sizes in Insole.

Write for Bulletin and Prices

B-F-McDonald COMPANY
Manufacturers & Distributors of Industrial Safety Clothing & Equipment

5721 W. 96th St., Los Angeles 45
Other Offices
in San Francisco and Houston

If you write maker identify as IEN - 8557

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

L. A. PHILLIPS, President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as IEN - 8558

"We Saved Money and got better Protection for TWO Customers by switching to

Fusetron DUAL ELEMENT Fuses

1 "Fusetron Fuses made it possible to use smaller size switch."

"Early this year I laid out a wiring job for the Nehi Bottling Works at Boise, Idaho. With ordinary fuses it was necessary to use a 400 ampere 250 volt main switch. The proprietor felt that the cost was too great.

"With Fusetron fuses I could use a 200 amp. 250 v. switch which besides being less expensive would result in better protection. The proprietor was happier with the lower cost and I received the electrical contract."

2 "A wholesaler's salesman showed us how to stop heating and fuse blowing in a main switch — with Fusetron dual-element Fuses."

"We discovered a bad heating problem in a 600 amp. 250 v. switch at Falk's Dept. Store, Boise, Idaho.

"A check at the switch showed only 380 amps. were flowing. With this load ordinary fuses would melt and open every 30 to 90 days, resulting in confusion and annoyance to customers and employees. A local wholesaler's salesman suggested 600 amp. 250 v. Fusetron dual-element Fuses be installed — then the heating stopped immediately."

R. M. Alloway
Alloway Electric Co., Boise, Idaho

Don't Risk Losses!

One **needless** shutdown . . . one **lost** motor . . . one **destroyed** switch or panel . . . one **burned out** solenoid . . . may cost you far more than replacing every ordinary fuse with a FUSETRON dual-element fuse now! Write for facts about FUSETRON dual-element Fuses.

FUSETRON
TRUSTWORTHY NAMES IN ELECTRICAL PROTECTION
BUSS

FUSETRON is a trade mark of
BUSSMANN Mfg. Co.
(Div. McGraw Electric Co.)
University at Jefferson St. Louis 7, Mo.

Start Saving with Fusetron Fuses

If you write maker identify as IEN - 8560

Here's why it pays to use LINK-BELT "RC" Flexible Couplings

Equalized load / Proper balance at high speeds / Effective compensation for end float and misalignment

Yes, two big engineering features—single chain simplicity and divided rollers—combine to assure top performance, economical power transmission. And that's why you get the three big operating advantages listed above with Link-Belt RC Flexible Couplings. Find out how you can use these efficient couplings to provide positive flexible shaft connection . . . from fractional to 1000 hp. Ask your nearest Link-Belt office or distributor, or write for Folder 2363.

LINK-BELT

"RC" FLEXIBLE COUPLINGS 13.132

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities.

If you write maker identify as IEN - 8561

CHAINS AND SPROCKETS

Thousands of tough jobs call for Jeffrey Chains and Sprockets. They are in universal use for unit machinery, for conveyors, bucket elevators and for transmitting power.

You can't go wrong when you select Jeffrey Chains and Sprockets . . . they are being put through the acid test of actual service on thousands of tough jobs . . . and especially where the demand is for top-quality products.

A type and size to meet any requirement.

Send for Catalog No. A-418

THE JEFFREY MANUFACTURING CO. Columbus 16, Ohio

IF IT'S MINED, PROCESSED OR MOVED . . . IT'S A JOB FOR JEFFREY!

sales offices and distributors in principal cities

If you write maker identify as IEN - 8562

Geared to Industry's Production Demands Since 1887

Offering the most complete line of washers available today . . . all types and sizes, all materials, all finishes. More than 25,000 sets of dies. Let us quote on your requirements.

WROUGHT WASHER MANUFACTURING CO.
The World's Largest Producer of Washers
2307 S. BAY ST., MILWAUKEE 7, WIS.

If you write maker identify as IEN - 8563

BORING . . Adjustable head feeds cutter to bore, face, recess

Source: KARL A. NEISE
404 Fourth Ave., Room 1308, New York 16, N. Y.

Made in Germany

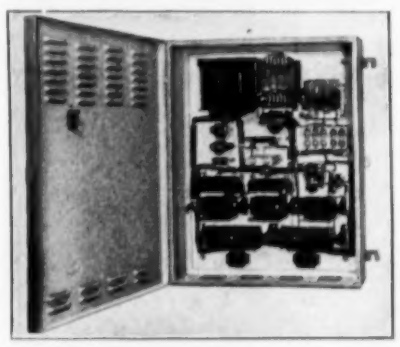
Two new sizes have been added to the Masterhead line of boring and facing heads. Maximum capacity is 31½ and 36¼ in. on the diameter respectively. Maximum adjustability of the slide is 5½ and 8¼ inches. Twelve self-acting slide feeds are in steps of 0.0008 in. between this figure and 0.0096 inch. One graduation of the sensitive adjustment on the diameter is 0.005 inch. One revolution of the sensitive adjustment is 0.008 inch. A quick adjustment measures 0.24 inch per revolution on the diameter.

Both new heads, with the self-acting slide feeds and automatic end release, are basically similar to the seven previously developed sizes that start at 2.16 in. in boring capacity. They can be applied on any machine with a rigid accurate spindle and sufficient power for the boring or facing operation. Slide ways and moving surfaces are lapped. Integral nondetachable shanks assure permanent maintenance of accuracy. Parts subject to wear are hardened. The point of automatic disengagement of the feed can be controlled within 0.0005 inch. Disengagement takes place automatically whenever excessive cutting pressure is encountered due to dull, broken or hooking tools or abnormally hard spots in the work.

If you write maker identify as IEN - 8564

DRIVE . . Variable speed control to operate dc. motor from ac. line

Source: FRANKLIN CONTROL CORP.
1973-77 S. Allis St., Milwaukee 7, Wis.



Control panel open

Magnetic amplifiers are employed in the place of electronic equipment in this new Model E-1 variable speed control. A complete assembly includes the control station, the control panel and a dc. motor. Power is taken from a 220-volt 60-cycle single-phase line. The dc. motor is a standard 220-volt unit open type ball bearing design, frame size NEMA-H66. Rating is ¾ hp. at maximum speed. Speed range is 49 to 2,450 rpm.

The control station mounts "start" and "stop" buttons and a speed control knob calibrated in per cent of top speed. Speed regulation is essentially flat at the lowest operating speed. It is within 2 per cent, between no load and full load, at top speed. Dynamic braking is part of the assembly. A thermal overload relay permits short time overloads, protects against damaging temperature rise. The control and power circuits are fused against shorting.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8565

You Cannot Beat Turbine-Type APCOS for Small Capacity, High Head Duties

Capacities to 150 G.P.M.

Heads to 600 Ft.

APCO Single Stage Turbine-Type Pump

PUMPS "by Aurora"

For Every Purpose

Write for BULLETIN 111

APCO Turbine-Type PUMPS —Ideal for "1001" duties where small capacities and high heads predominate. Get acquainted.

AURORA CENTRIFUGAL PUMPS are available in many types and sizes —all noted for their streamline coordination between impellers and shells.

We Invite Your Special Pump Problems

Write for CONDENSED CATALOG "M"

DISTRIBUTORS IN PRINCIPAL CITIES

AURORA Always PUMPS — **AURORA PUMP COMPANY**

Subsidiary of THE NEW YORK AIR BRAKE COMPANY
52 Loucks Street Aurora, Illinois

If you write maker identify as IEN - 8566

Send for NEW Gage and Gage Inspection Control Procedure

Showing how McCaskey Gage Control gives split-second answers to such essentials as:

. . . . where gage is . . who has it?
. . . . when due for re-inspection?
. . . . condition . . new-worn-modified?
. . . . how many on hand?
. . . . too few . . too many?
. . . . where located in crib?

McCaskey Gage Control also includes history of each gage, central clearance records of each employee's gages, gage withdrawal order, etc. . . . all designed for complete control with speed, accuracy and minimum clerical work. Procedure approved for Government contract requirements.

Write today for "McCaskey Gage and Gage Inspection Control" — Bulletin A-759 IEN — and complete details.

McCaskey INDUSTRIAL CONTROLS
PRODUCTION - INVENTORY - TOOLS - COSTS - MAINTENANCE
THE McCASKEY REGISTER CO.
ALLIANCE, OHIO
McCaskey Systems, Ltd., Galt, Canada
The McCaskey Register Co., Watford, England

If you write maker identify as IEN - 8567

AIR-MITE AIR ARBOR PRESSES

(AIR OR SPRING RETURN)

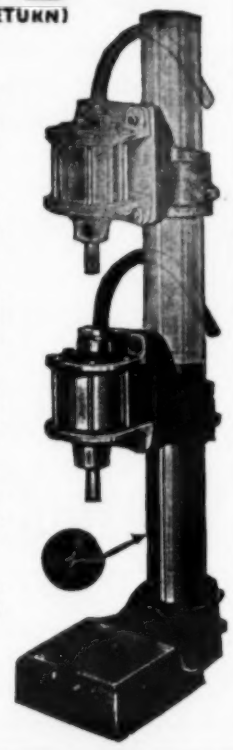
Completely Flexible

AIR-MITE now supplies solid steel upright columns in any lengths required to give you these important flexibility features:

1 Normal ram clearance of 0" to 6" may be increased to any clearance required for special application.

2 Supplementary or replacement cylinders with any ram stroke required are available for quick, easy mounting on same brackets.

3 Rapid socket wrench adjustment cylinder bracket swivels for perfect alignment with work.



Presses are available in ¼, ½, ¾, and 1 ton capacities — for stacking, riveting, marking, punching and similar operations.

Write for complete catalog of Air-Arbor Presses and single and double acting Air Cylinders.

AIR-MITE
4417-L West Carroll Ave.
Chicago 24, Ill.

If you write maker identify as IEN - 8568

VIKING .... Originators OF THE DESIGN THAT MADE ROTARY PUMPS FAMOUS

August, 1953

All Rotary Pump Users,
Everywhere.

Gentlemen:

You're right! Today's market includes many Rotary Pump manufacturers. Too often it is just a sideline.

But with well over a million and a half Viking Rotary Pumps in service today throughout the world, shrewd pump buyers in every field of industry and commerce prove they prefer the pump that is different!

Get the facts! — Write today for complete bulletin 53SJ

Yours Very Truly
Viking Pump Company
Cedar Falls, Iowa.

If you write maker identify as IEN - 8569

Johnson FLEXIBLE SEAMLESS METAL HOSE

FOR CONVEYING UNDER PRESSURE OR VACUUM
STEAM • OIL • WATER • GAS • REFRIGERANTS

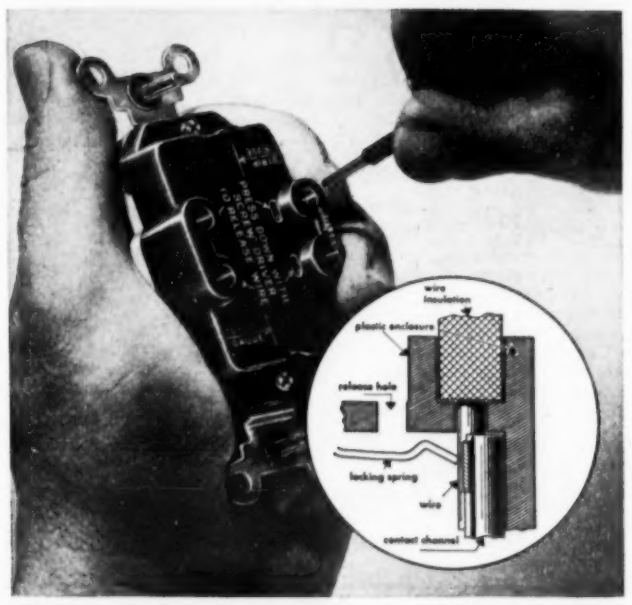
MANUFACTURED FROM SEAMLESS TUBING WITHOUT JOINTS, WELDS OR PACKING, WITH HEATPROOF FITTINGS ATTACHED • *FOR HOT OR COLD APPLICATIONS*

WRITE FOR BULLETIN J-3

JOHNSON METAL HOSE, INC.
P. O. BOX 952 • WATERBURY 20, CONN.

If you write maker identify as IEN - 8570

NOW... just push in the wires



New G-E "PRESSURE-LOCK" Terminals

connect wiring devices automatically—without binding screws

You can now make electrical connections by simply pushing straight, stripped wires into these new "pressure-lock" terminals. The spring lock holds the wire securely against a contact channel. Jarring, vibration, and even a pull of 75 pounds won't loosen the wires . . . yet they can be released instantly by depressing the locking spring with a screwdriver. There are no binding screws . . . no looping, hooking, or crimping operations. It's the easiest way to wire.

These terminals are featured in the new GE3800-line of outlets, switches, and lampholders. They take No. 14, 12, or 10 Awg solid conductor, or No. 14 or 12 stranded wire. All live parts are completely enclosed. Listed by Underwriters' Laboratories, Inc. For more information, write for our illustrated folder. Section D79-842, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

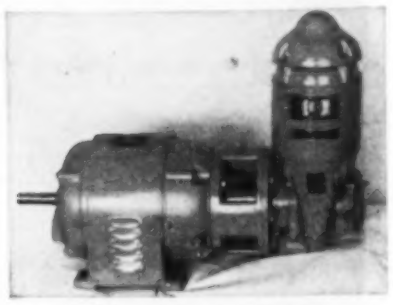
You can put your confidence in—

GENERAL ELECTRIC

If you write maker identify as IEN - 8572

DRIVE . . Two speed assembly with two motors and over-running clutch

Source: U. S. ELECTRICAL MOTORS INC.
Box 2058-A, Terminal Annex, Los Angeles 54, Calif.



Two motors, one shaft

Two speeds, at 100 and 1,750 rpm., are available at the output shaft of this new motor and clutch assembly. It was initially developed to drive a washing machine for a 15-min. interval at 100 rpm. to be followed by a 3-min. interval at 1,750 rpm..

Between the two motors is an over-running clutch which permits the larger horizontal motor to stand at rest for the slow speed interval. When external controls are operated the circuit of the small motor is opened and the large one is closed to step up the output speed. The assembly is typical of special drives the company is prepared to manufacture for given applications.

If you write maker identify as IEN - 8573

BELTS . . Wire hook fastening laces belts to ¾ in. in thickness

Source: CLIPPER BELT LACER CO.
972-76 Front N. W., Grand Rapids 2, Mich.

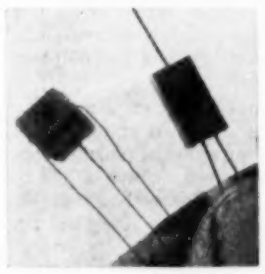
List price is $3.30 per box

Number 7 designates a new large size in the company's line of carded belt lacing hooks. It can be employed to lace a ⅜-in. leather belt. It develops pull of 125 lb. for each hook or 675 lb. per in. of belt width. Maximum belt thickness, in which the hook applies, is a bit over ¾ inch. Application is with a No. 6 or No. 8 lacing machine. Either will embed the hooks flush with the belt surface and will clinch the points.

If you write maker identify as IEN - 8574

ELECTRONIC PARTS . . Transitors, point contact and junction types

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.



In sample lots

Type WX-4813, to the left in the illustration, and Type WX-3347, to the right, are new junction type and point contact type transistors with leads for wired-in installation. Both are offered for developmental use in amplifier, oscillator and switching circuits.

Operating characteristics for Type WX-4813, when used as an amplifier with grounded emitter and base input, are 1 to 2 ma. collector current and 30 db. power gain. Characteristics for Type WX-3347, as a grounded base amplifier under small signal conditions, are 2 to 3 ma. collector current, 18 db. power gain, 2 mc. cutoff.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8575

PAGE FENCE *-Since 1883*

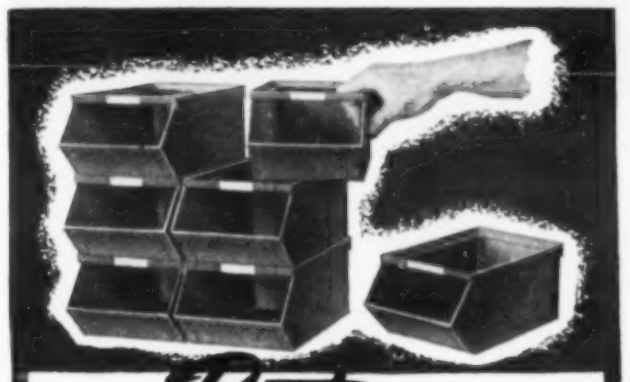
• AMERICA'S FIRST WIRE FENCE •

Could you **blame** yourself if failure to safeguard property resulted in loss? After all, isn't property protection a responsibility of all management? Security is a job for Page Chain Link Fence, available in heavily galvanized Copper-Bearing Steel, rust-immune Stainless Steel or corrosion-resisting Aluminum. But PAGE means more than a quality product. It is a complete fence service, performed by more than 100 firms having technical training and fence erecting know-how, and conveniently located throughout the country. For illustrated data and name of firm nearest you—

***Write** to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.*

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

If you write maker identify as IEN - 8576



Parts...

★ **Where You Want Them . . .**

★ **When You Want Them**

You'll save time, space and labor handling parts and material when you use these patented STACKBINS.® STACKBINS keep parts instantly accessible—eliminate waste hand motions—stack compactly to form units of exactly the right shape and capacity—make order filling or assembly work faster, easier, more efficient. Heavy steel, all-welded construction. Sizes from 3½" x 6" x 3¼" to 15" x 24" x 11".

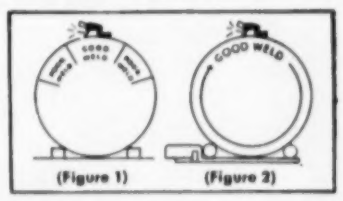
Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main Street, Pawtucket, R. I.

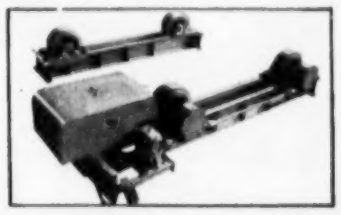
STACKBIN SYSTEM
"Stacked and Still Accessible"

If you write maker identify as IEN - 8577

How Worthington Turning Rolls insure BETTER WELDS



(Figure 1) (Figure 2)



Designed for use in welding cylindrical vessels of any size, Worthington Turning Rolls will insure the best possible weld while lowering costs and increasing footage up to 50%.

The above sketches show how. Unless work is turned continuously, good downhand welding is obtainable only in a small area (Fig. 1). With a Worthington Turning Roll, downhand welding is assured for the complete circumferential seam (either by manual or automatic welding) (Fig. 2).

Write for Bulletin 210-D. Worthington Corporation, Plainfield, New Jersey.

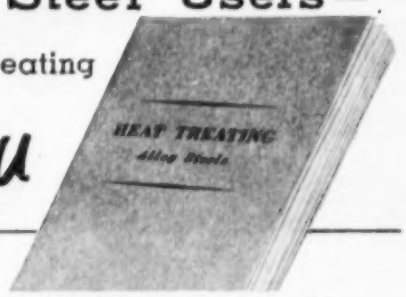
Y.2.2

WORTHINGTON
Welding Positioners—Turning Rolls

If you write maker identify as IEN - 8578

Alloy Steel Users—

this heat treating handbook is for *you*



Jam-packed with valuable information on heat treating, this new 55-page handbook has been specially prepared for those working with alloy steels.

It contains all salient data for normalizing, annealing, carburizing, flame hardening and other heat treating methods. Includes data and charts on critical points, nitriding depths, mechanical properties and other essential information. You'll find it invaluable for reference and well worth adding to your personal library. For a complimentary copy send your IENquiry today or write Frasse.

Frasse alloy steel stocks include:

Rounds	3140	4340
Hexagons	4130	8620
Sheets	4142	TS 8620
Plates	4142 H.T.	8630
Tubes	TS 4142	8740
	TS 4142 H.T.	

Aircraft grades conform to Gov't "specs"

Peter A. FRASSE and Co., Inc.

17 Grand Street, New York 13, N. Y.

Hartford • Philadelphia • Buffalo • Syracuse

If you write maker identify as IEN - 8579

Johnson Sleeve Bearings available from distributors

This complete line of standard sleeve bearings is the largest in the market. It includes General Purpose Cast Bronze Bearings, Electric Motor Bearings, Graphited Bearings and Ledaloyl Self-lubricating Bearings. In addition Johnson Babbitt Metal and over 400 sizes of Universal Bronze Bars. Order from catalog—we'll send you the latest copy free.

JOHNSON BRONZE CO.
476 S. Mill St.
New Castle, Pa.

JOHNSON B BEARINGS
Sleeve-Type

Write Today

If you write maker identify as IEN - 8580

QUALITY GEARS, precision-cut to your specifications

Available in steel, brass, bronze, cast iron, any metal and any non-metallic gear material. All gears are custom cut to specifications.

Spur Gears • Bevel Gears • Worms • Worm Wheels • Helical and Spiral Gears • Internal Gears • Sprockets • Finishing Machine Racks

Send blueprints and specifications (or samples) for quotations on above type gears, worm and worm wheels, or sprockets—any quantity.

Abart GEAR & MACHINE CO.
4823 WEST 16th STREET • CHICAGO 50, ILLINOIS
Mfrs. of Gears and Speed Reducers • BIshop 2-2524

If you write maker identify as IEN - 8581

send for a sample CHASE POLYTEX BAG

Manufacturers of small parts or perishable products are finding that Chase POLYTEX bags are the economical answer to their packaging needs. These tough, transparent bags are odorless and moisture-proof, and resist the growth of bacteria and mold. They are non-toxic—airtight—and offer full protection to metal, hygroscopic and anhydrous products. Sized to fit your needs, these bags are available plain or printed in attractive colors. Send for free samples—and prices.

SINCE 1847
CHASE BAG COMPANY
309 West Jackson Boulevard,
Chicago 6, Illinois

If you write maker identify as IEN - 8582

MELTING . . Mobile kettle for asphalt, pitch, 375 and 500 gal.

Source: AEROIL PRODUCTS CO.
67-71 Wesley St., South Hackensack, N. J.

Material lift pump can be added

Model 952, with 375-gal. capacity, and Model 1052, rating 500 gal., are two new Jumbo oil fired "hot stuff" kettles in the company's Heet-Master line. Each unit includes two preheating compartments for barrels measuring 26 by 37 inches. The melting kettle itself is made of 10 gage steel and employs the company's standard double tube heating equipment. The melted material can be drawn off a few moments after the oil burner has been started.

Overall dimensions are 163 and 170 in. in length. Overall width, including the fenders, is 68 and 76 inches. Loading height is 43 and 59 inches. Height to the draw off cock is 20 and 16 inches. The fuel tank capacity is 30 gallons. The oil burner consumes about 2½ and 3½ gph. Weights are 2,450 and 3,050 pounds. List prices are $1,550 and $1,775.

If you write maker identify as IEN - 8583

BELTS . . Splicing fixture to make 3/16 in. round belt endless

Source: LOUIS LEVIN & SON INC.
780-84 E. Pico Blvd., Los Angeles 21, Calif.

Eliminates coupler click

Leather belt, $\frac{3}{16}$ in. in round cross-section, is secured in one of the two clamping slots in this new splicing fixture and a razor is employed to shave the belt on a 2-in. taper. Both belt ends are shaved. Then adhesive is applied and the ends are secured in the second of the two clamping slots to complete the splice.

The fixture can be employed to mount a belt on a machine that cannot be taken apart to insert a standard endless belt. The belt can be prepared in about 2 minutes. The adhesive will set sufficiently for use in 2 hours or less.

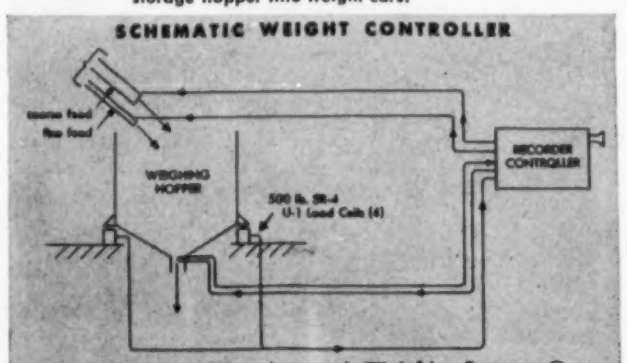
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

Looking for product ideas?
Try the literature reviews, page 72

If you write maker identify as IEN - 8584

SR-4® Devices in Industry—Uses Unlimited

Problem: How to weigh automatically an expensive plastic from storage hopper into freight cars.



Block diagram—SR-4 Automatic Weighing System. **Outputs of four 500 pound U-1 SR-4 Load Cells are totalized into strip chart recorder-controller which furnishes a complete record of each weighing cycle including final and initial weights.**

Solution: A leading chemical company does it rapidly and accurately with a fully automatic SR-4 Weighing System.

This SR-4 System is giving all of these advantages:

- System will pay for itself quickly due to its very high accuracy in weighing large daily shipments of such an expensive material.
- Speed of operation (less than two minutes per 1000 lb. cycle) cuts costs.
  - Only one operator needed . . . just part time.
  - Automatically furnishes complete record of each weighing.
  - Rugged construction minimizes maintenance.

For latest technical information please write to Baldwin-Lima-Hamilton Corp., Dept. 3013, Philadelphia 42, Penna.

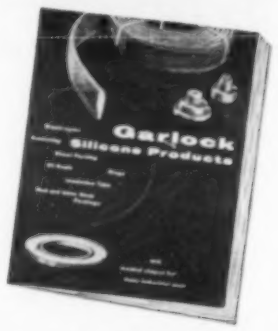
TESTING HEADQUARTERS

BALDWIN-LIMA-HAMILTON
Philadelphia 42, Pa.

If you write maker identify as IEN - 8585

NEW!

WRITE FOR YOUR COPY TODAY!



New folder describes complete line of

GARLOCK SILICONE PRODUCTS

This new handy 8-page folder shows many of the Garlock products available in heat-resistant and aging-resistant silicone rubber. These products include: diaphragms, gasketing, sheet packing, oil seals, rings, insulation tape, rod and valve stem packings, and molded shapes for many industrial uses. The folder also points out the many features of silicone rubber and gives examples of typical applications. Send for Silicone Products Folder AD-147.

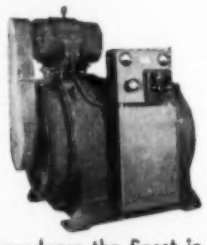
THE GARLOCK PACKING COMPANY
PALMYRA, NEW YORK
In Canada: The Garlock Packing Company of Canada Ltd., Toronto, Ont.
Branch Offices in Most Principal Cities

GARLOCK

If you write maker identify as IEN - 8586

...FOR A JOB WELL DONE!

KATO *ENGINEERED* **ELECTRICAL EQUIPMENT**



KATO ENGINEERING has been building Special Electrical Equipment and machinery since 1928. Our modern, well equipped plant produces the finest in generators and electrical machinery from the smallest to the largest.

We Invite Your Inquiries on Special Requirements!

A. C. GENERATORS
Sizes from 100 watts to 300 K.W., in one or two bearings. Speeds of 720-3600 R.P.M., 60 cycles. Also 15-800 cycles, single and three-phase.

D. C. GENERATORS
Sizes ranging to 15 K.W.

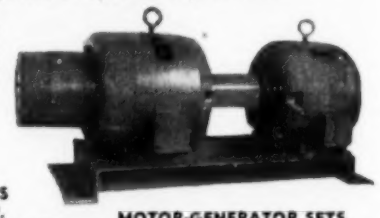
ROTARY CONVERTERS
For Changing D.C. to A.C.

HIGH FREQUENCY CHANGERS

D. C. MOTORS UP TO 10 H. P.

D. C. MOTORS WITH A. C. TAKE-OFF

A. C. MOTORS, SINGLE PHASE
1, 1½, 3 H. P.

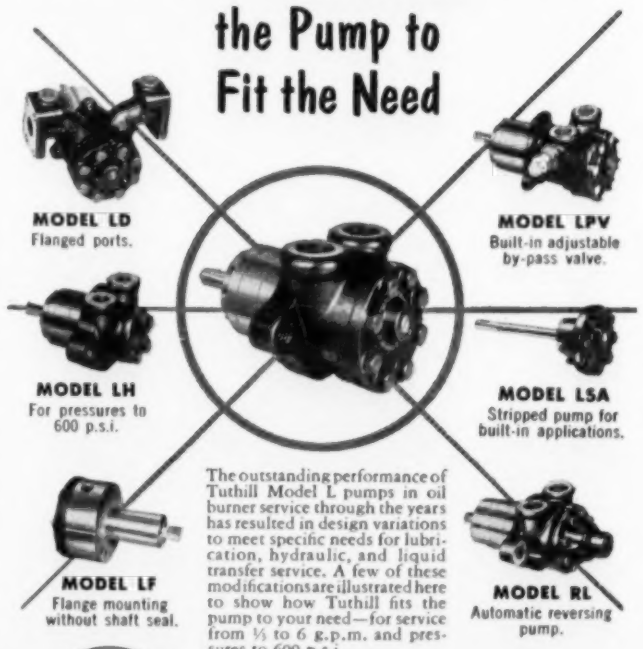


MOTOR-GENERATOR SETS
D. C. to A. C., A. C. to D. C. 25 cycles to 60 cycles, 60 to 400 cycles.

KATO *Engineering Company*
WRITE TODAY FOR INFORMATION!
1478 FIRST AVENUE MANKATO, MINNESOTA

If you write maker identify as IEN - 8587

Here's How TUTHILL Builds the Pump to Fit the Need



MODEL LD
Flanged ports.

MODEL LPV
Built-in adjustable by-pass valve.

MODEL LH
For pressures to 600 p.s.i.

MODEL LSA
Stripped pump for built-in applications.

MODEL LF
Flange mounting without shaft seal.

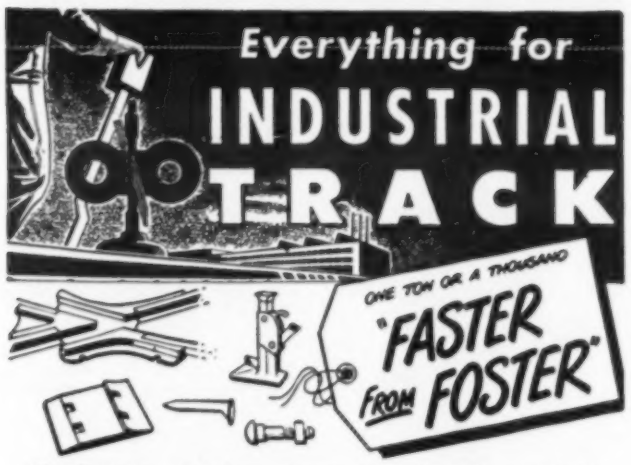
MODEL RL
Automatic reversing pump.

The outstanding performance of Tuthill Model L pumps in oil burner service through the years has resulted in design variations to meet specific needs for lubrication, hydraulic, and liquid transfer service. A few of these modifications are illustrated here to show how Tuthill fits the pump to your need—for service from ⅓ to 6 g.p.m. and pressures to 600 p.s.i.

Write for Catalog No. 101 for complete details

TUTHILL PUMP COMPANY
939 East 95th Street, Chicago 19, Illinois
Canadian Affiliate: Ingersoll Machine & Tool Company, Ltd. Ingersoll, Ontario, Canada

If you write maker identify as IEN - 8588



Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin IE-8.

L.B. FOSTER CO.

CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as IEN - 8589

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE—LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Be sure to write for illustrated literature and prices

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

If you write maker identify as IEN - 8591

TESTING . . Electronic instrument reads specific gravity of flow in pipe

Source: OHMART CORPORATION
2349 Ferguson Road, Cincinnati 38, Ohio

No physical contact

Specific gravity is measured and recorded continuously by the new Series-SG gravity meter. It employs the company's previously developed Ohmart Cell which generates an electrical current when exposed to radioactive energy.

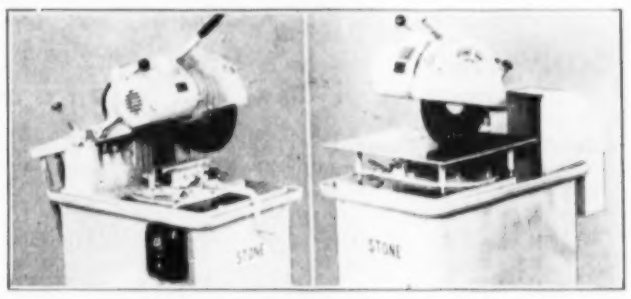
The radioactive source is placed on one side of a pipe line carrying a liquid, slurry, sludge or granular material flow. The measuring cell is placed on the opposite side and is connected electrically through an amplifier to the recording instrument. Density or specific gravity of the flowing material affects the amount of radioactivity penetrating through the pipe to the cell. Difference, in generated current, is recorded as a measurement of variation in specific gravity of the material in the pipe.

The instrument is available in eight standard ranges with specific gravity from 0.500 to 2.750. The standard measuring unit fits a pipe measuring 3 to 6 inches. It mounts externally on brackets and connects by means of a cable to the amplifier which can be set up as far away as 200 feet. The components are dust and weatherproof construction and are protected by an acid proof paint. Measurements can be transferred to any standard single record potentiometer recorder having a range of 0 to 20 mv. full scale.

If you write maker identify as IEN - 8592

CUTTING . . Abrasive machine, 16 in. disc, converts for free hand use

Source: STONE MACHINERY CO.
530 Fayette St., Manlius, N. Y.



Spindle turns at 2,500 rpm.

The assembly shown to the left in the illustration is the company's regular heavy duty Type M75 motor driven cutoff machine, previously described IEN-10637-52. It is shown in the view to the right after a five minute conversion for free hand cutting of gates and risers from non-ferrous castings. The converted assembly mounts a flat work table above the regular vise and secures the motor driven head in set position.

Capacity as a standard cutoff machine is 2½ in. solids, 4-in. pipe tube or equivalent structurals. The motor rates 7½ hp. and is geared-head design for direct connection.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8593

Do you use barrier wraps?
Then you need the new

DERBY BW BARRIER WRAP MEASURING DISPENSERS

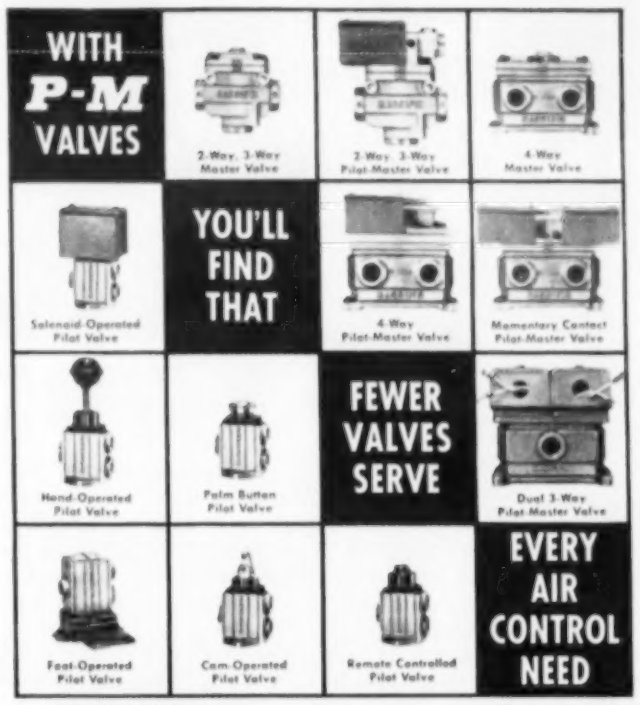
The Derby BW Dispensers eliminate the slow, messy, expensive Barrier Wrap handling problem and provide a substantial saving in time, labor and material. Large rolls may be converted into the exact widths and lengths desired in one single operation.

Available in models to accommodate 4", 6", 8", 12" and 14" rolls and equipped with Universal Slitter to deliver a variety of desired widths and definite lengths.

For further information write Dept. IF

DERBY SEALERS, INC. DERBY, CONNECTICUT

If you write maker identify as IEN - 8594



ADAPTABILITY! **Singly, or in combination, these valves provide 2-way, 3-way or 4-way control. Hand, foot, cam or solenoid operated. Every pipe size from ¼" through 1¼". Write for Bulletin 231.**

HANNIFIN

Hannifin Corporation, 1107 S. Kilbourn Ave., Chicago 24, Ill.
AIR AND HYDRAULIC CYLINDERS • PRESSES • AIR CONTROL VALVES

If you write maker identify as IEN - 8595

IDEAL "Hand Type" CLEANERS

Cut Cleaning Time and Costs!

3 MODELS ...for EVERY CLEANING JOB

2/3 H.P.
1-1/3 H.P.
1/2 H.P.

For easier, faster maintenance or production cleaning jobs — on machinery, stock bins, scrap pick up — there's an IDEAL "Hand-Type" Cleaner to meet your needs exactly — to save you money! Three great models, all built to rugged, real industrial standards. Get today's top cleaner value — get IDEAL!

IDEAL INDUSTRIES, Inc.
1105 Park Avenue, Sycamore, Illinois

Please give us FREE DEMONSTRATION of the IDEAL "Hand-Type" Cleaner for our plant.

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE____

TRY ONE FREE!

If you write maker identify as IEN - 8596

Brazes 360 Shells Per Hour

Problem: *Brazing nose adaptors on 105 mm projectiles — fast!*
Solution: *100-kw Allis-Chalmers Induction Heater.*

THIS shell manufacturer selected induction heating because he considered it the only way of providing both high production and precise control of heat necessary for this application.

In addition, he has versatility if he needs it. For this same unit can also be used for soldering, annealing, case and through hardening. A simple change of work coils is all that's needed to switch from job to job.

It will pay you to find out how much Allis-Chalmers induction heaters can increase production and reduce your costs. Call your nearby A-C District Office, or write Allis-Chalmers, Milwaukee 1, Wisconsin.

A-4118

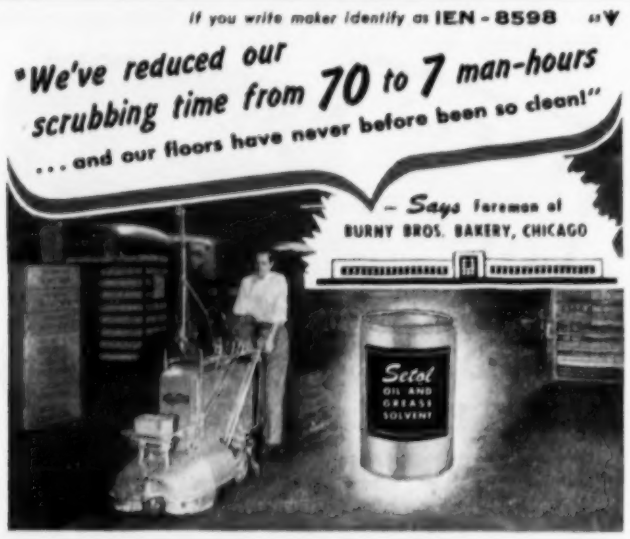
ALLIS-CHALMERS

If you write maker identify as **IEN - 8597**

Streamlined construction of the new T-J Cylinders *eliminates tie rods . . . reduces head size . . .* and *saves up to 40% in mounting space!* In addition, a new high in strength is achieved with solid steel heads and heavy wall seamless steel body . . . leakproof construction . . . extra high safety factor. Cylinder walls are precision honed and hard chrome plated for long-life efficiency. Available with new T-J Super Cushion Flexible Seals. Many standard sizes and styles . . . cushioned and non-cushioned . . . for pushing, pulling, lifting, clamping or control jobs. Write for bulletin 8152. The Tomkins-Johnson Co., Jackson, Michigan.

37 YEARS EXPERIENCE T-J
TOMKINS-JOHNSON

If you write maker identify as **IEN - 8598**



Burny Bros. garage and stockroom floors get daily scrubbing with a *Job-Fitted Combination Scrubber-Vac* and *Setol Cleanser. They're an unbeatable team* to speed the cleaning of oily, greasy floors. *Here's why:* A *Scrubber-Vac* applies the cleanser, scrubs, and picks up—*all in one operation! Job-fitted* to specific needs, the machine provides maximum brush coverage. Its teammate, *Setol Cleanser,* emulsifies grimy oil and grease *instantaneously* for fast, thorough removal by the machine's powerful vac. The *Scrubber-Vac* shown above, *Finnell's 213P,* cleans up to 8,750 sq. ft. per hour! For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2608 East St., Elkhart, Ind.

FINNELL SYSTEM, INC.
Originators of Power Scrubbing and Polishing Machines
50th Anniversary FINNELL
BRANCHES IN ALL PRINCIPAL CITIES

If you write maker identify as **IEN - 8599**

use AVERY Kum Kleen LABELS

- *REDUCE LABELING COSTS*
- *ELIMINATE WASTE MOTION*
- *SPEED ASSEMBLY OPERATIONS*

Because Avery labels are pressure sensitive, they're the fastest, easiest and most economical labels you can use . . . for nameplates and trademarks, for guarantees and instructions—for approval seals, diagrams and many, many other uses.

They can be supplied in any size, shape or color . . . on backing tape in roll or sheet form . . . to meet your own specific labeling requirements.

With Avery electric dispensers labeling is as much as 5 times faster than with ordinary methods!

You can save time and money by using these labels in YOUR business. Clip the coupon for FREE samples.

AVERY ADHESIVE LABEL CORPORATION
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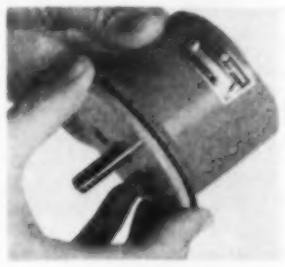
☐ Send us case histories & free samples
☐ Tell us about your dispensers
☐ Have the Avery Label Man call

Name .....
Company .....
Address .....
Our business is: .....

If you write maker identify as **IEN - 8600**

DRIVE . . Magnetic brake adjusts and holds a constant tension

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



No rubbing parts

Tension in winding and processing natural and synthetic yarns, rubber, glass fiber, wire, can be adjusted and then held constant in a varying speed range by the company's hysteresis type magnetic brake. It is available in two new ratings, in addition to its original 0.1 to 0.5 ounce inch.

The new units have torque ranges of 0.4 to 4.0 oz. in. and 2.0 to 14.0 ounce inches. Diameters are about 2 and 3 inches. Weights are ¾ and 2½ pounds. Speed can range from 0 to 1,500 rpm. The brake holds stalled tension by its tendency to reverse rotation for a few degrees after slowing down to a standstill.

Adjustment is by turning the calibrated aluminum housing to change distance between a hysteresis ring and a set of permanent Alnico magnets. Data and section illustrations are presented in Bulletin GEA-5867.

If you write maker identify as **IEN - 8601**

TESTING . . Radioisotopes in unrestricted microcurie quantities

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.

Compound list upon request

The company announces availability of twenty-five radioactive compounds for laboratory use in microcurie amounts so no authorization is required from the AEC and no "use bookkeeping" is required. The compounds are bottled and sold "over the counter" and by mail in the same manner that the company's 6,000 other chemicals are handled.

If you write maker identify as **IEN - 8602**

CONVEYING . . Power belt unit mounts motor on side of main frame

Source: METZGAR COMPANY
417 Douglas St. N. W., Grand Rapids 4, Mich.

For loading, receiving

Height is minimized in this new belt conveyor by locating the driving motor and its equipment at the side rather than beneath the frame. It is built to specification for horizontal or medium incline installations. The assembly shown measures 15 in. in height by 65 ft. in length. It mounts an 18-in. belt riding over a 12-in. drive pulley at 60 fpm. Drive is by a 5-hp. motor. Rollers and slide beds under the belt provide load capacity of 60 lb. per foot.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8603**

If you write maker identify as **IEN - 8604**

KECKLEY

No matter what your float valve needs may be, Keckley can meet them. For dependable level control, you can't beat Keckley valves. They're built to offer long service with minimum maintenance. And Keckley balanced float valves provide constant, uniform flow and positive closing. Sizes from ½" to 12". Screwed, standard or extra heavy flanges. Check with Keckley.

PRESSURE REGULATORS • TEMPERATURE REGULATORS • POP SAFETY VALVES • RELIEF VALVES • FLOAT BOXES • BALANCED VALVES FORGED STEED GAUGES • MOTOR OPERATED VALVES • PUMP GOVERNORS • FLOAT VALVES • STRAINERS

O. C. KECKLEY COMPANY
400 West Madison Street • Chicago 6, Illinois

If you write maker identify as **IEN - 8605**

If you write maker identify as **IEN - 8606**

NOLAN ONE-MAN CAR DOOR OPENER

Opens Doors in 20 seconds or less!

The Nolan Car Door Opener gives one man a tremendous amount of pulling energy, to get the most stubborn, hard-rolling door wide open in a hurry! New chain has 2000 lbs. tensile strength.

No gangs needed. No mangled limbs or loss of life. A few quick pulls on anchor chain gets any door open in a jiffy. The NOLAN saves its low initial cost in first hour of operation.

New safety features make the Nolan 1-Man Car Door Opener a more necessary labor-saving, money-saving help than ever before.

MANY THOUSANDS IN CONSTANT DAILY USE! FREE LITERATURE.

Order one or more NOLAN Model-H Car Door Openers now. Catalog on request.

$37.50 F.O.B. Bowerston

THE NOLAN COMPANY • 114-C Pennsylvania St., Bowerston, Ohio

If you write maker identify as IEN - 8607

IF THE AIR IN YOUR PLANT IS all fouled up...

No problem too tough-whether your air is London Fog thick or Sahara Dry-gaseous or dusty- smoky or hot . . . MUCKLE VENTS remove it quickly and efficiently. These streamlined, propellerdriven,roofmounted ventilators are designed with motor out of the air stream to effectively pull out either wet or dry air. MUCKLE VENTS are a completely weatherproof packaged unit ready to be installed with a minimum of expense and work, available in wide range of 15 sizes from 254 CFM to 10280 CFM.

LET MUCKLE VENTS INCREASE EFFICIENCY IN YOUR PLANT!

Muckle

WRITE SOME TERRITORIES OPEN FOR SALES REPRESENTATIVES

MANUFACTURING CO., OWATONNA 33, MINN.

If you write maker identify as IEN - 8608

Best way to

CUT TIRE COSTS

Get longer service with less trouble—specify the right tire for each specific job!

Goodyear never has to sell you a makeshift—because Goodyear builds a *complete* Industrial Tire line—each unit in it designed *expressly* to do its specific jobs superlatively well.

That's why you'll save money—year in, year out—specifying GOODYEAR in exactly the type tread and size that's best to meet *your* problems.

FREE

Technical Engineering Advice and Service

To help you solve your particular Industrial Tire problems, Goodyear maintains a staff of fully qualified technical experts. For their free recommendations, write:
Goodyear, Industrial Tire Sales, Akron 16, Ohio

GOODYEAR

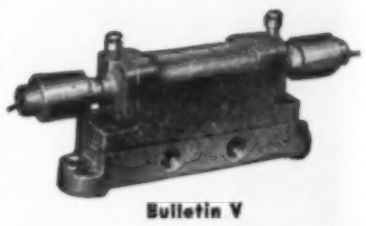
INDUSTRIAL TIRES

We think you'll like THE GOODYEAR TELEVISION PLAYHOUSE every other Sunday—NBC TV Network

If you write maker identify as IEN - 8610

VALVE . . Four way pneumatic, pilot operated, slide valve design

Source: GALLAND-HENNING NOPAK DIVISION
2760 S. 31st St., Milwaukee 46, Wis.



Bulletin V

Model V is a new three or four-way pilot-pressure and bleeder-operated air control valve for operation at 15 to 150 pounds. The valve employs an oil resistant neoprene slide with an O-ring packed piston. The slide is held against its seat by a backing spring. Connection sizes range from ¼ to 1 inch.

Type R employs a balanced piston with equal pressure maintained on the inside and on both ends. Bleeding air from either end, by means of two way bleeder valves, causes pressure on the opposite end to shift the main valve. Shifted position is maintained until the air is bled from the opposite end. This valve can be cycled by means of a two-way cam or foot poppet or a Type-S two-way solenoid bleeder valve momentarily energized by suitable means.

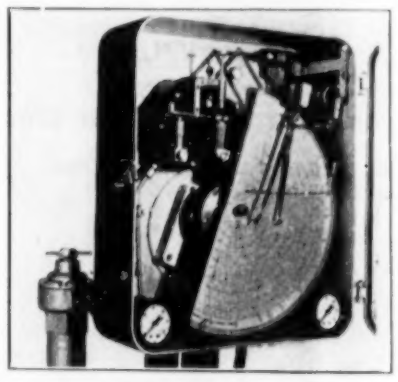
Type AR employs an unbalanced piston with the inside of the valve under constant pressure. The piston is shifted, in this case, by admitting pilot pressure to the large piston end when a Type-S three-way normally closed solenoid pilot valve is energized. Normal or air return position results when the pilot valve is de-energized and the end is open to exhaust. This valve can be used as a three way normally open or normally closed assembly by plugging one cylinder port or the other.

Overall base dimensions range from 6½ to 16 in. in length, based on the Type-R balanced piston design. Corresponding base width is 1½ to 3 inches. The solenoid is available for 110, 220 or 440 volt ac. or for dc. operation. It threads into position in the end of the valve housing.

If you write maker identify as IEN - 8611

METER . . Differential flow unit with control to handle wide variation

Source: ROCKWELL MFG. CO.
624-G N. Lexington Ave., Pittsburgh 21, Pa.



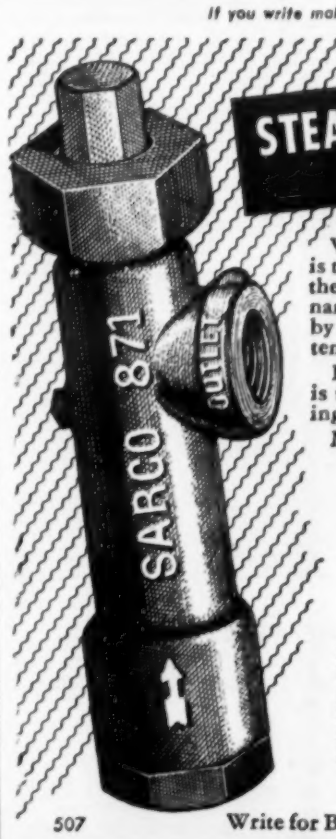
Flow starts action

New instrument, for orifice meter measuring station use, includes a control mechanism to actuate a four-way valve when the differential across the primary metering orifice reaches a predetermined point. The valve then opens to put a secondary meter into service to supplement the primary instrument. When the flow load drops below the set point, the valve is repositioned by the control and the secondary meter is taken from the line.

The new control is mounted in the primary orifice meter housing. It provides pressure for the cylinder operated Nordstrom valve from a line pressure connection ahead of the valve. Pressure of 10 lb. or more actuates the control unit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8612



STEAM TRAPPING OUT-DOORS

When steam heated equipment is too far away to permit returning the condensate to the boiler, ordinary steam traps cause much waste by discharging condensate at high temperature.

If equipment is out-doors, there is the further problem of preventing freeze-ups in winter.

Meet both problems with...

SARCO
LIQUID EXPANSION STEAM TRAPS
No. 871

This trap discharges condensate to atmosphere below 212°F regardless of inlet pressure (to 350 psi). When cold, its large discharge valve is wide open,—it cannot freeze.

507 Write for Bulletin 258 for full information.

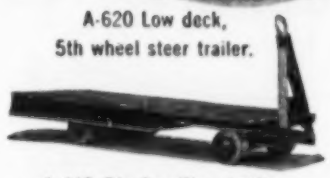
SARCO SAVES STEAM — SARCO COMPANY, INC. Empire State Bldg., New York 1, N.Y. SARCO CANADA, LTD., TORONTO 5, ONTARIO

If you write maker identify as IEN - 8613

HEAVY DUTY INDUSTRIAL TRAILERS

Standard or Special CAPACITIES TO 60,000 lbs.

A-620 Low deck, 5th wheel steer trailer.



A-443 Die handling trailer.

A-520
Medium height, 5th wheel steer trailer.

MERCURY

In addition to the standard "Type A-310" castor steer trailer, MERCURY offers a complete line of heavy duty trailers in castor steer, fifth wheel steer or four wheel steer designs in capacities to 60,000 lbs. As the world's largest producer of industrial trailers, Mercury is well equipped to fill your specific requirements. For complete information request Bulletins A-100 and A-999.

MERCURY MANUFACTURING COMPANY
4132 S. Halsted Street, Chicago 9, Ill.

If you write maker identify as IEN - 8614

SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

If you write maker identify as IEN - 8615

Close Tolerances...

. . . that's another advantage of Hackney Deep Drawn Shapes and Shells when used as component parts of the equipment you manufacture.

The Hackney shape shown above, for example, permitted more exact product specification when it replaced a steel casting. Reduced weight, elimination of porosity problems, and lower unit costs were additional benefits.

Hackney parts are designed to your specifications—are produced with our 50 years of experience. Write for details.

PRESSED STEEL TANK COMPANY
Manufacturer of Hackney Products

Hackney

1449 S. 66th Street, Milwaukee 14
1322 Vanderbilt Concourse Bldg., New York 17
253 Hanna Building, Cleveland 15
936 W. Peachtree Street, N. W., Room 139, Atlanta 3
208 S. LaSalle Street, Room 786, Chicago 4
577 Roosevelt Bldg., Los Angeles 17
18 W. 43rd Street, Room 23, Kansas City 11, Mo.

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

If you write maker identify as IEN - 8616

For 50 years we've been learning from our industrial customers what they want in centrifugal pumps.

We've come as close as modern design and materials allow to putting what you want into the Fig. 3405 pump.

The 12-page illustrated bulletin No. 721.6 covers every detail of this pump—general description, specifications, mechanical data, parts interchangeability table, performance curves, dimensions. We think you'll agree that here's a pump with everything for long, satisfactory service. Write today for Bulletin 721.6. GOULDS PUMPS, Inc., Dept. IEN, Seneca Falls, N. Y.

Goulds PUMPS INC. Seneca Falls New York

If you write maker identify as IEN - 8617

C.H.F. Sectional Tables WITH SWING SEATS

MAXIMUM SEATING IN ANY SIZE SPACE

For Recreation Rooms . . . Factory Work Tables

Available in units to seat 4 to 24 people, "CHF" Sectional Tables may be purchased in varying lengths to meet your exact requirements. Seats swing completely under table out of the way to give you full aisle space. Your choice of seats . . with or without backs . . . cast iron frame construction in a variety of colors. "CHF" Sectional tables are standard equipment for schools, factories, clubs, churches and all types of institutions.

WRITE FOR ILLUSTRATED CATALOG AND PRICE LIST!

THE CHICAGO HARDWARE FOUNDRY CO.

"Dependable Since 1897"

3483 Commonwealth Avenue • North Chicago, Illinois

If you write maker identify as IEN - 8618

Fire Alarm Systems for OUTSTANDING DEPENDABILITY

Designed to operate unfailingly when needed, even years after installation, Couch Fire Alarm Systems assure positive, dependable protection of life and property.

If your plant requires:

- a simple evacuation alarm
- a coded alarm which locates the fire
- a tie-in with municipal alarms

Couch Fire Alarm Systems are the ideal solution. Write today for Bulletin 5211.

Simplified Systems of Communication

S.H. Couch Company, Inc.

NORTH QUINCY 71, MASSACHUSETTS

If you write maker identify as IEN - 8619

COUNTING . . Electronic equipment reads 20 to 100,000 events per second

Source: BERKELEY DIV. BECKMAN INSTRUMENTS INC. 2202 Wright Ave., Richmond, Calif.

Input 0.2 to 20 volts

Model 5500 is a combination of counter and timer to provide a direct reading of elapsed time between two events, a direct reading of the number of events that occur during a precise time interval, and a means to make straight-forward counts. Elapsed time is measured directly with accuracy within 10 microseconds in a range of 40 microseconds to 100,000 seconds.

Results are presented directly in either kilocycles or seconds with decimal point indication to eliminate need for conversion. Scanning is in any multiple of 1 or 10 seconds. Operation is automatic with display from 0.5 to 5 seconds. It is manual with any display interval.

If you write maker identify as IEN - 8620

METAL PARTS . . To specification, are made of powdered stainless steel

Source: KEYSTONE CARBON CO. 1953 State St., St. Marys, Pa.

Need little or no machining

Corrosion and heat resistance, strength, hardness, all characteristic of stainless steel, are combined in molded parts which the company is prepared to tool and product to specification. Porosity and permeability can be controlled, in the molding process, to produce parts suited for filtering, separating, diffusing, flow restriction for liquids and gases, or for prelubrication as in bearing bushings.

If you write maker identify as IEN - 8621

DRILLING . . Portable electric tool, universal motor, rates 1/4 in. in steel

Source: UNITED STATES ELECTRICAL TOOL DIVISION 1048-52 Findlay, Cincinnati 14, Ohio

List is $28

Model 14-AU is a new aluminum frame ball bearing electric drill designed for continuous duty. It operates at free speed of 2,500 rpm. Control centers at a thumb switch on the handle. Equipment includes a 1/4-in. three-jaw geared chuck and key and a three-conductor rubber covered cable and unbreakable attachment plug. The tool weighs 5 lb. and measures 10½ in. in overall length.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8622

CYLINDERS.
Single acting
Double acting
Telescopic

COMMERCIAL HYDRAULIC OIL *Fluid Power Controls*

are REDUCING COSTS and INCREASING PRODUCTIVITY for the home building industry.

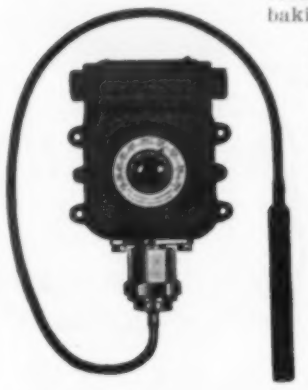
FOR COMPLETE DETAILS ASK FOR YOUR COPY OF CATALOG H-7

THE "COMMERCIAL" SHEARING AND STAMPING COMPANY — YOUNGSTOWN, OHIO · CHICAGO, ILL. · SALT LAKE CITY, UTAH

If you write maker identify as IEN - 8623

TEMPERATURE CONTROL

Operates in five ranges of 150, 350, 450, 650 & 1000 deg. F.



Model Z—Temperature control for baking ovens, air heaters, plastic molding presses, soft-metal melting pots and similar devices heated by gas, electricity or oil. Calibrated and uncalibrated models for five temperature ranges: 150, 350, 450, 650 and 1,000 deg. F. Equipment includes thermostatic element with 5 ft. capillary tubing. Longer tubing to specification.

The control unit contains a Micro switch with normally-closed, normally-open or single-pole double throw contacts. On the housing face is a temperature-setting knurled knob and porcelain-enameled dial. Conduit connection is on top of the housing. The cover, front and sides can be removed without disturbing setting or wiring. Overall dimensions are 6 in. in height by 3 in. in depth.

Control circuit capacity is 500 watts ac, 50 watts dc. The thermostatic element is interchangeable, can be replaced on the job, and is furnished for a variety of applications.

List price for two-wire design is $40 to $47 for uncalibrated element ranges, $45 to $52 with calibrated elements. The 3-wire design ranges from $45 to $52 and from $50 to $57.

Send for Bulletins 505-I and 505-J

THE PARTLOW CORPORATION

4 Campion Road New Hartford, N. Y.

If you write maker identify as IEN - 8624

If you write maker identify as IEN - 8626

NEVER BEFORE! A SWITCH SO SMALL
SO LIGHT (6½ oz.) • SO LOW PRICED
AS LINEMASTER COMPACT
FOOT SWITCH

Write for folder and prices NOW.

Let us quote on your special switch requirements.

Our brand new Linemaster "COMPACT" combines unbelievable low price with the finest, most efficient design now available. It's small and light for maximum adaptability. The absolutely foolproof actuating mechanism has amazing sensitivity which permits versatile operation by foot, finger, knee or elbow. Ruggedly constructed of long lasting heavy gauge steel, featuring a handsome black crackle finish and non-skid base, "COMPACT" switch has thousands of potential profit-making industrial applications.

LINEMASTER SWITCH CORP.
426 Woodstock Terrace • Woodstock, Connecticut

If you write maker identify as IEN - 8627

Towmotor dumps pot of annealed castings into shakeout hopper at Cleveland plant of Eberhard Manufacturing Co.

BOTTOMS UP! Here's to TOWMOTOR, the fast and economical way of handling materials! Easy, too, because TOWMOTOR Power Steering reduces steering effort 80%! And speaking of power, the new "Cushioned Power" Diesels are as gentle and economical as ponies—with all the terrific strength of wild horses! There are dozens of other features that make special jobs like the one above, mere routine, and make *your* job twice as important to the boss. Send today for free booklet, "What Makes It Tick?" TOWMOTOR CORPORATION, Div. 2608, 1226 East 152nd Street, Cleveland 10, Ohio.

TOWMOTOR — THE ONE-MAN-GANG ®
FORK LIFT TRUCKS and TRACTORS
Since 1919
TOWMOTOR ENGINEERED FOR QUALITY PERFORMANCE

If you write maker identify as IEN - 8628

Increase Production . . .

REDUCE FATIGUE*

Durable Sponge Rubber

STANDING MATS

*Fatigue robs you and your business! Long hours of standing, dampness and vibration take their daily toll of efficient help!

Production line workers, machine operators, store clerks, EVERYONE works better when using Durable Standing Mats. They're safe—the beveled edges prevent tripping, the corrugated top is non-slip! Factories, institutions and stores all over the nation have PROVEN the effectiveness of DURABLE SPONGE RUBBER STANDING MATS.

Available in all sizes up to 35 x 4-feet

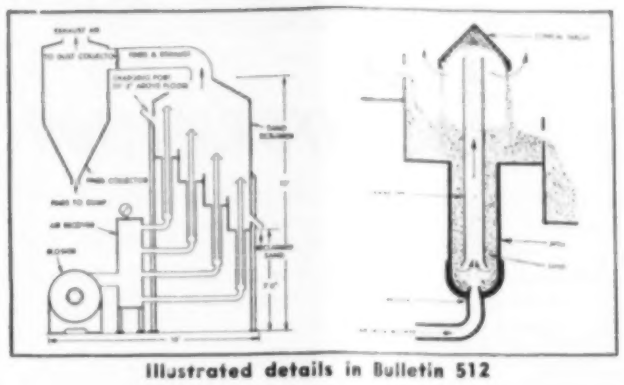
Write for free sample and current price list

Durable RUBBER PRODUCTS CO.
549 WEST FULTON STREET
CHICAGO 6, ILLINOIS

If you write maker identify as IEN - 8629

FOUNDRIES . . Pneumatic conditioner to reclaim used and burned out sand

Source: NATIONAL ENGINEERING CO.
545-7 W. Washington Blvd., Chicago 6, Ill.



Illustrated details in Bulletin 512

Sand Scrubber is a new assembly of vertical stationary cells, in steps of 2 to a total of 8, inside a rectangular housing. Used or burned out foundry sand is delivered through a charging port at the upper end. It moves by gravity to surround the upper pair of cells and to fill wells surrounding the cell columns into which air is delivered by a motor driven blower. The sand, mixed with air, is hurled upward through the column to collide with other grains entrapped within the peak of a conical skirted deflector.

Sand grains fall back to the main sand mass for recirculation. The air escapes upward to issue from an exhaust opening from where it and entrained fines move to a dust collector. Control over the degree of reclamation is maintained by adjusting the feed rate.

The standard 8-cell assembly rates to 4 ton per hour. The blower is driven by a 60-hp. motor to provide 2,100 cfm. at 4-lb. pressure. The exhaust equipment is designed to pull about 3,000 cfm. to maintain a negative pressure within the housing and to provide a range for control in elimination of the fines. Overall dimensions for the housing and blower are 16 by 4½ by 19 feet. Reclaimed sand delivers through a chute at the side opposite to that at which it entered.

If you write maker identify as IEN - 8630

WRENCH . . For stud removal, ratchet design, two sizes to ¾ inch

Source: CLARK-FEATHER MFG. CO.
653 Clark St., Fort Morgan, Colo.

$7.50 and $12.50

Interchangeable steel jaws, milled to grip with progressive power, apply in the head of this new stud wrench. Turning a knurled ring on the body sets the jaws to grip or immediately releases them. Built-in ratchet action permits application in close quarters. The wrench has a hole through its center so it can be applied on any length.

Type SW1 measures 2 in. in overall diameter and fits any stud from ¼ to 1 inch. Type SW2 measures 2½ in. overall and fits studs above ½ in. to ¾ inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8631

NO MORE GUESSWORK!

PROCESS TIMING

automatically recorded by a Little "TIME CLOCK"

Bolt this 2 lb. Recorder right to the machine itself. Let the "Process" record itself on the chart —(No ink, no pencil, no wires; the record is recorded in wax).

"The cure must be 8½ minutes"—"the heat must be applied exactly 15 minutes"—"the plating must take just 2 minutes"—"the pigment must be mixed just 12 minutes"—etc.

The *Servis Recorder* checks on this—it records just what happened—it "*times the process.*" You are no longer in the dark; from now on you know all day and every day whether your *process timing* is lived up to—or if somebody slipped—if something went wrong to ruin your product for that afternoon, or that whole shift! Write for Process Timing Catalog. The Service Recorder Co., 1375 Euclid Avenue, Cleveland 15, Ohio.

The Servis Recorder
The "Time Clock" for Machinery

If you write maker identify as IEN - 8632

NEW...LIGHTWEIGHT...NON-CORROSIVE

UDYLITE LAMINEX TANKS

Udylite Laminex tanks of molded fiberglass have many of the advantages of aluminum or stainless steel yet cost less.

In addition to this important low initial cost, Udylite Laminex tanks have these unique features—

- Non-corrosive inside and out. They're easy to clean, too.
- Electrically non-conductive.
- Extremely lightweight. A 2'x2'x3' tank weighs only 60 lbs!
- If accidentally damaged, can be quickly and easily repaired, in place.
- Capacities are from 25 to over 500 gallons, and depths up to six feet are available.

For full information on prices and sizes, call your Udylite Technical Man or write direct.
THE UDYLITE CORPORATION
DETROIT 11, MICHIGAN

THE Udylite CORPORATION

If you write maker identify as IEN - 8633

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

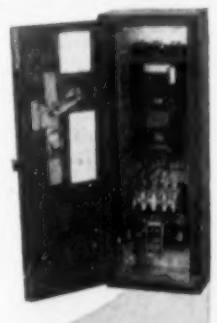
MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

If you write maker identify as IEN - 8634

ALLIS-CHALMERS Combination STARTERS

a magnetic starter and a safety switch in one compact unit . . .



Starter has silver-to-silver double break contacts and non-carbonizing arc chambers. Circuit breaker gives short circuit protection, serves as disconnect switch. Available in sizes 0 to 5.

Starters with fusible or nonfusible disconnecting switches are available up through size 3.

A-4046

There is an Allis-Chalmers starter for every motor need. Contact your nearby A-C representative or write for selection guide 14B7733, Allis-Chalmers, Milwaukee 1, Wisconsin.

ALLIS-CHALMERS

If you write maker identify as IEN - 8635

DICO WHEELS ARE ROLLING Everywhere!

DICO
DES MOINES 5, IOWA

From 6" to 24.5" Rubber Tire Diameters.
Pneumatic — Drop Center and Demountable Rim.
Cushion and Solid Rubber Bolted Types.
Heavy Duty Wheels with Molded-on rubber.

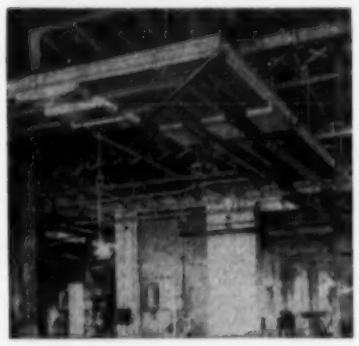
Let DICO help you with your wheel problems.

Write for complete catalog.

DICO COMPANY 202 S.W. 16th ST., DES MOINES, IOWA

If you write maker identify as IEN - 8636

Major CHANGES MADE Minor WITH Trumbull Flex-A-Power® Busways



Plant expansion, or rearrangement of production machines, becomes a simple matter when a Flex-A-Power electrical distribution system is installed. Machines plug in almost as easily as your toaster. New sections can be added quickly and inexpensively. An entire system can be dismantled and reinstalled with almost 100 per cent reuse of material.

Available in these types:

* **Type LVD Feeder Busway,** 600-4000 amps, 2-, 3- and 4-pole, to 600 v.
* **Type FVK Plug-In Busway,** 225-1000 amps, 2- and 3-pole and 3 phase 4 wire, to 600 v.

Type LTG Plug-In and Trolley Busway, 50 amps, 2-, 3- and 4-pole, 300 v., AC or DC.

Type TK Heavy Duty Trolley Busway, 100, 200 and 400 amps, 2- and 3-pole, to 600 v.

** With copper or aluminum busbars.*

TRUMBULL ELECTRIC
DEPARTMENT OF GENERAL ELECTRIC COMPANY
PLAINVILLE, CONN.

If you write maker identify as IEN - 8637

ANGLE STEEL STOOLS

RUGGED-Smooth, with ADJUSTABLE BACK REST TO FIT WORKER

•Years of designing and manufacturing experience stand back of Angle Steel's rugged industrial stools. Perfect rigidity is engineered into all varying models and designs. All stools have Angle Steel's riveted construction. Legs have ball-type feet for solid footing and easy sliding. Available in various heights. Finished in Olive Green, Angle Steel Gray or School Brown baked enamel. Choice of wood or steel seats. Wood seats and back rests in natural finish.

Helpful literature . . . FREE

ANGLE STEEL, Inc.
Dept. 3 Plainwell, Michigan

SEND FREE Literature . . . we're interested in: .....Benches .....Machine Tender Trucks .....Stools.

Company.....

My Name.....Title.....

Address.....

USEFUL NEWS NOTES INFORMATION

If you write maker identify as IEN - 8638

ABRASIVE CUTTING . . Instruction booklet on abrasive cut-off wheels from safety standpoint

Grinding Wheel Institute
2130-A Keith Bldg., Cleveland 15, Ohio

"Cutting-Off Wheels" is new 20-page pocket booklet prepared by the Institute's Safety Committee and offered on request. It covers such topics as machine condition and power, wheel speeds, wheel mounting, work support, reasons for wheel breakage, safety rules and precautions in operation.

If you write maker identify as IEN - 8639

BRAZING . . Nickel content alloy recommended by technical bulletin to prevent corrosion in stainless

Handy & Harman
80-84 Fulton St., New York 7, N. Y.

Interface corrosion in mild media such as quiet tap water can occur rapidly with silver brazing alloys on certain types of stainless steel. Company has published information on this problem in new 4-page Technical Bulletin T-9 to describe reasons for the corrosive action, methods of avoiding it, and to conclude by recommending a nickel-content brazing alloy for satisfactorily operation. A copy will be sent you on request.

If you write maker identify as IEN - 8640

CERAMIC PARTS . . Question and answer booklet on properties, forms and applications of ceramic parts

American Lava Corp.
653 Cherokee Blvd., Chattanooga 5, Tenn.

Bulletin 533 is a 12-page pocket booklet that uses nontechnical language to describe the company's AlSiMag technical ceramics. Wear resistance, rigidity, high temperature, chemical inertness, fastening to metal parts, shapes and sizes are among the points covered. Pictures show applications of the parts to a variety of products.

If you write maker identify as IEN - 8641

AUTOMATIC CONTROLS . . Unattended station for petroleum pipe line pumping is operated automatically

Foxboro Company
42 Neponset Ave., Foxboro, Mass.

Instrumentation to run a pipeline pumping station is described in new 6-page Application Engineering Data 781-3. It covers four main control functions, tells major steps taken in each, shows a schematic diagram of the equipment, and pictures the control cabinet which houses the equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8642

FAWICK GIVES YOU YOUR CHOICE!

The world-famous FAWICK TYPE CB Airflex CLUTCH

The NEW completely ventilated FAWICK TYPE VC Air-Ring CLUTCH

Exclusive VC CLUTCH design features: cooler operation; riveted, replaceable lining; loose, expanding operating tube easily replaced without removing clutch from shaft.

The new FAWICK VC CLUTCH is unmatched in heavy-duty service for high-starting load and sustained slippage conditions. Its cooler operation provides "new clutch" performance throughout a long maintenance-free life.

Write for Bulletins 400-A and ML-102.

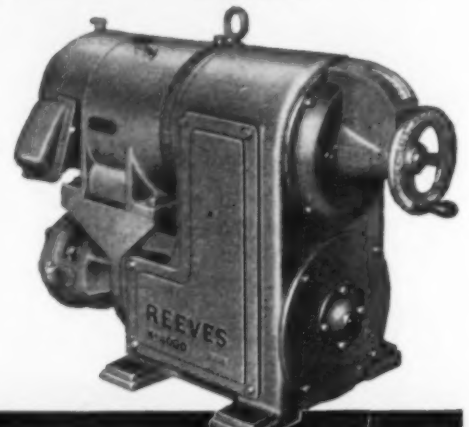
FAWICK AIRFLEX DIVISION
FEDERAL FAWICK CORPORATION
9919 CLINTON RD., CLEVELAND 11, O.

FAWICK Airflex
INDUSTRIAL CLUTCHES AND BRAKES

If you write maker identify as IEN - 8643

A complete variable speed power plant in single unit

Combines motor, REEVES speed varying mechanism, and speed reducer in one, space-saving unit.



REEVES VARI-SPEED MOTODRIVE

To new machines or old, REEVES Vari-Speed Motodrive brings all the benefits of stepless speed adjustability. Available with any standard, constant-speed, foot-type motor—no special motors to stock. Horizontal and vertical models, 1 to 25 hp; 2:1 through 6:1 speed ratios; fractional hp sizes in speed ratios through 10:1; manual or automatic controls. Assures *positive, accurate* speed changes without stops—easily applied to machines in service—proved in 300,000 installations. Send for free catalog No. IN 10c-G.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

If you write maker identify as IEN - 8644

NEW PACKAGE CONVENIENCE

New Color Indentification confusion proof label
New 5-gross Master Carton to fill special request for medium to large range sizes regularly packed 10 to carton
Secure, permanently attached 4-fold lid
Extra Strong 4-fold corners
Write for our catalogue

FACTORY WAREHOUSES
North Bergen, N. J.
Chicago 10, Ill.
Atlanta, Georgia

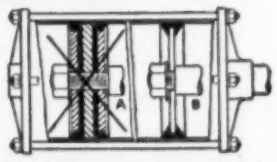
SOUTHERN SCREW COMPANY
STATESVILLE • NORTH CAROLINA

If you write maker identify as IEN - 8645

Double Acting One-Piece PISTON

PATENTED

HERE'S REAL SIMPLIFICATION



A complete one piece, Double Acting PISTON—so skillfully designed that 1 part (B) actually replaces 5 to as high as 7 parts, ordinarily used in conventional assembly (A).

This radically new ALLIS Rubber Piston is a unit piston plate and packing. Cup Members are constructed of highly resistant synthetic rubber, molded integrally to a solid metal plate. Time Tested and Proven—Highly Efficient with constant Lip Sealing action. Cannot be installed incorrectly.

Available in all standard cylinder sizes,—for Hydraulic and Pneumatic mediums such as oil, water, air, etc. Now being used by machinery manufacturers as standard or original equipment. Write for details today.

We produce MOLDED MECHANICAL RUBBER PRODUCTS . . . Bellows, Boots, Packing, Seals, Diaphragms, Dampeners, etc. Each part is Laboratory Controlled and Formulated to meet your operational requirements.

Write today for our illustrated booklet — 32 pages of vital information

ALLIS RUBBER CORPORATION
Tel.: MOnroe 6-5050 • 123 N. Green Street, Chicago 7, Ill.

If you write maker identify as **IEN - 8646**

NEW Safety Goggles

Now . . . 2 New
AO COVERGLAS GOGGLES
Fit Over Safety and Personal Glasses

AO's newest development in eye protection—Chippers' and Welders' Coverglas Goggles—can be worn over practically every pair of personal glasses (even the biggest frames) and most types of safety prescription goggles *with and without side shield.*

Wider vision, too, because the lenses are larger and scientifically designed to give up to 20% more vision. Yet, with all these features the goggles weigh but a fraction of an ounce more than ordinary Coverglas goggles . . . cost only slightly more.

These goggles are the newest . . . and two of the greatest . . . developments since the advent of safety goggles. Get all the facts about these two outstanding Coverglas goggles from your AO Safety Products Representative. He can supply you.

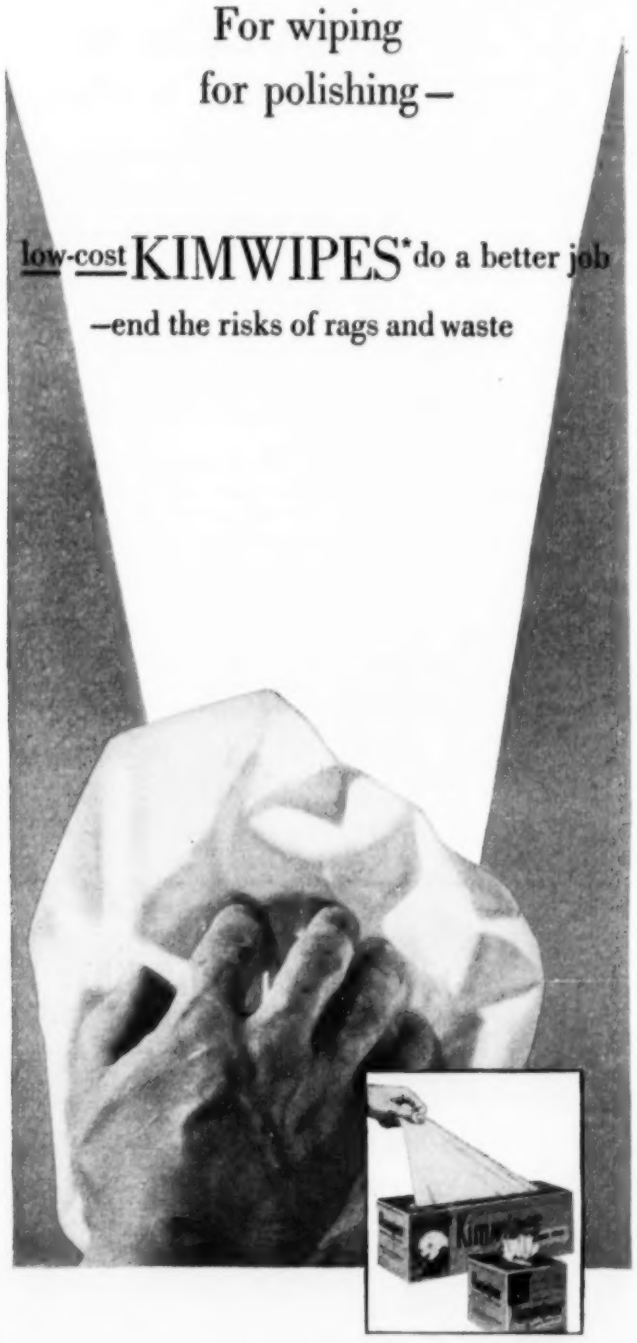
American Optical Company
SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches in Principal Cities

If you write maker identify as **IEN - 8647**

For wiping
for polishing—

low-cost KIMWIPES* do a better job
—end the risks of rags and waste



Here's a soft, clean, absorbent tissue made especially for precision polishing and tough-job wiping. Kimwipes industrial tissues are non-abrasive—you'll never have a worry about scratching, linting or disintegrating. Strong enough, too, for most any job, yet so inexpensive a fresh, clean tissue can be used every time. Two sizes—15"x18" and 5"x9". Order a supply from your distributor today or write to Kimberly-Clark Corporation, Neenah, Wisconsin.

KIMWIPES INDUSTRIAL WIPING TISSUES

A Product of
Kimberly-Clark

*T. M. REG. U. S. PAT. OFF. & CAN.

USEFUL INFORMATION
(Continued)

If you write maker identify as **IEN - 8649**

CONVEYING . . New application examples of overhead handling by monorail in data sheet form

American MonoRail Co.
13111 Athens Ave., Cleveland 7, Ohio

Eight new data sheets are offered on request to suggest possible uses for monorail equipment in overhead material handling. Each covers a specific application example. One shows automatic handling of crankshafts through a series of heat-treating operations. Your name will be added to the list for these and future sheets as well as for the file to date.

If you write maker identify as **IEN - 8650**

COPPER ALLOYS . . Corrosion resistance of copper and its alloys is described in 28-page booklet

American Brass Co.
696 S. Main St., Waterbury 20, Conn.

Theory of corrosion, types of corrosive attack and a table of corrosion resistance to 183 materials are given in revised edition of the company's Booklet B-36. Other tables present composition, forms, physical properties of coppers, brasses, leaded brasses, bronzes, cupro nickels, other copper alloys.

If you write maker identify as **IEN - 8651**

ENGINEERING . . Booklet for high school students on what the engineer does and what it takes to be one

Stevens Institute of Technology
Castle Point, Hoboken, N. J.

"What's Engineering" titles 16-page pocket booklet intended to answer typical questions from high-school students considering engineering as a career. Some of these are what's an engineer, what does he do, what is his future, what does it take, and which engineering college.

If you write maker identify as **IEN - 8652**

FASTENINGS . . Color sound film describes uses and advantages of socket head screws

Allen Mfg. Co.
131-35 Sheldon St., Hartford 2, Conn.

"Hold Everything" is title of new 16-mm. Kodachrome sound motion picture with 20-min. running time. It describes why distributors carry the company's socket-head screws, what the difference is between socket-head screws and other fasteners, and what the advantages are for the company's design.

If you write maker identify as **IEN - 8653**

FASTENINGS . . Wall chart and templates present information on locking bolts and blind rivets

Huck Mfg. Co.
2478-82 Bellevue Ave., Detroit 7, Mich.

Product Chart, measuring 22 by 26½ in., illustrates eight types of the company's fasteners including lockbolts and blind rivets. A table summarizes styles, sizes, materials, properties, applications. The company will send you a copy on letterhead request together with two plastic templates to assist in tracing the fasteners into a drawing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8654**

There's All the Difference in the World in Grease Fittings!

Specify **UNIVERSAL'S**
New Giant Button Head or Flush Type Fittings

Streamlined One-Piece Design | Giant Button-Head Fitting, Plug Check | Streamlined One-piece Design | Giant Flush-Type Fitting, Ball Check

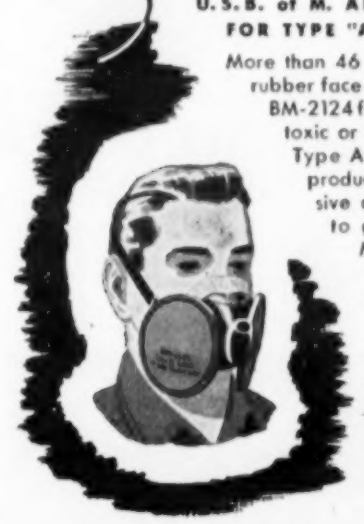
Note the practically indestructible one-piece construction, streamline design, positive seating of ball or plug check. Special spring design assures maximum clearance for free passage of grease. For a really modern, improved grease fitting, specify UNIVERSAL. Application engineering available promptly on request. Write now for complete information.

UNIVERSAL LUBRICATING SYSTEMS, INC.
785 ALLEGHENY AVE., OAKMONT, PA.

If you write maker identify as **IEN - 8655**

BE FRESH STAY FRESH

Wear a
DUPOR No. 46
U.S.B. of M. APPROVED RESPIRATOR FOR TYPE "A" AND LEAD DUSTS



More than 46 sq. in. filtration area. Soft rubber face mask. U.S.B. of M. Approval BM-2124 for LEAD Dusts and ALL other toxic or poisonous dusts as well as Type A (Pneumoconiosis or Silicosis producing dusts). Unit has exclusive controlled breathing valves to guard against stale air. Maximum visibility—no interference with goggles or glasses.

Sample sent $3.25 *ppd*

H. S. COVER
South Bend, Ind.

If you write maker identify as **IEN - 8656**

Man alive! This Hydraulic Jack DOES EVERYTHING but walk and talk!

It's *no ordinary* hydraulic jack . . . this is a *"Porto-Power"*! Its compact, *remotely-controlled* ram is threaded for fast assembly with ingenious attachments . . . to push, pull, clamp, press, bend or spread . . . over any span, any angle!

Every maintenance crew needs this

Porto-Power S31 KIT

Replace slow, dangerous, damaging maintenance methods! The 10-ton hydraulic unit and attachments save up to 9 man-hours moving a single machine. Pull pulleys; push out pins, bushings, bearings; bend rail; clamp—do "1001" other tough jobs!

Buy from leading supply houses. Write for "Porto-Power" catalog.

BLACKHAWK
BLACKHAWK MFG. CO., Dept. J-1583, Milwaukee 1, Wis.

If you write maker identify as **IEN - 8657**

JOHNSON wide-rehandling clamshell

EASY-CLOSING
big-diameter sheaves, with sealed-in needle bearings, reduce friction losses, deliver full power to cutting lips. Light weight, sturdy bucket assures big payload performance in loose materials.

ALL-WELDED
smooth, fast cleaning. Hard manganese cutting edge welded to lips toughens with use. 10 Wide Rehandling sizes: ⅜ - ½ - ¾ - 1 - 1¼ - 1½ - 1¾ - 2 - 2½ and 3 cu. yds.

Other Johnson types: General-Purpose and Heavy-Duty Digging.

MAIL TODAY

to: C. S. JOHNSON Co. CHAMPAIGN, ILLINOIS (Koehring Subsidiary)
Send complete facts on .....-cu. yd. Wide-Rehandling Clamshell Bucket
NAME _____
COMPANY _____
STREET _____
CITY, STATE _____

If you write maker identify as IEN - 8658

NEW MEAD INDUSTRIAL
AIR POWER
CATALOG Ready!

Full of Suggestions for FASTER, CHEAPER PRODUCTION!

Illustrated, describes Air Cylinders, Valves, Air Operated Presses, Vises, Chucks, Hammers, Drill Press Feeds, Work Feeders, Timers, semi-automatic combinations, etc. *Pneumatic Cylinders.

Write for Complete Catalog!

MEAD SPECIALTIES COMPANY
4114 NO KNOX AVE., DEPT. EA-83, CHICAGO 41, ILL.

If you write maker identify as IEN - 8659

Performance records prove.....

HOMESTEAD VALVES...are a "Better Buy"

A pottery* in Ohio tried practically every type of valve on its "slip" lines, but the highly abrasive material, at 125 pounds pressure, ruined the average valve in a few months—in some cases, in a few weeks. Our engineers recommended HOMESTEAD Cam-Seald VALVES with special, hard-faced plugs and bodies. The pottery installed them on all "slip" lines in the plant.

Performance records kept during the past several years show that the HOMESTEADS are lasting more than three times longer than any other valve previously used. Savings in replacement and maintenance costs repay many times over the first cost of the HOMESTEADS.

For more than 60 years HOMESTEAD VALVES have been licking equally tough jobs on scores of services in many different types of industries. Chances are there's a valve problem they can solve for you. Why not ask our engineers about it? No obligation.

*Name on request.

Write today for VALVE REFERENCE BOOK No. 39

HOMESTEAD VALVE MANUFACTURING COMPANY
"Serving Since 1892"
P. O. Box 85 • Coraopolis, Pa.

If you write maker identify as IEN - 8660

NOW Spray On design layout ink

for METAL GLASS or WOOD

EASIER! FASTER!

• No brush, no waste, no mess, no stained hands. Aerosol-type can sprays on CROWN Design Layout Ink in fine mist that dries to excellent scribing surface in a minute. DARK BLUE. Also ideal for "OK" or "reject" inspection marking.

Order Today! $1.59 Per 12-oz. Can

15% discount in cases of 12. Additional discount for larger quantities. F.O.B. Woodstock, Illinois.

CROWN INDUSTRIAL PRODUCTS CO.
715 Amsterdam St., Woodstock, Ill.
Please ship at once:
.....(how many?) cans
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CROWN Design Layout Ink.
Name.....
Company.....
Our Purchase Order No.....
Address.....
City.....Zone.....State.....

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 8661

FASTENINGS . . Tracing template for jig and fixture components such as screws, knobs

Northwestern Tool & Engineering Co.
124 Hollier Ave., Dayton 3, Ohio

Full scale drawings of 263 items are reproduced in new 25 by 11-in. template that folds to 8½ by 17 inches. The drawings are in white lines on a black background to assist in tracing into a drawing. Products include threaded studs, shoulder screws, jig feet, quarter-turn screws, hand knobs, flanged nuts, T-slot nuts. No charge for the template.

If you write maker identify as IEN - 8662

HARD FACING . . Application data sheets on rod and electrodes for wear proofing metal parts

American Manganese Steel Division
387-91 E. 14th St., Chicago Heights, Ill.

Six new data sheets are offered by the company under the title of "Amscoating." Each describes a specific application of hard-facing material by torch or welding arc and carries a series of recommendations by type of part to be surfaced. A post-hole auger and diesel-engine valves are typical.

If you write maker identify as IEN - 8663

HEATING . . Application example in bulletin of space heaters for comfort and process drying

Dravo Corporation
Liberty & Fifth Aves., Pittsburgh 22, Pa.

Case Study Report 360-52, just released, is a 4-page bulletin on application of the company's Counterflo gas and oil-fired space heater to a plant making vitreous-china sanitary ware. Comfort heating is complicated by amount of 700 lb. per hr. evaporation from parts in process. The bulletin tells how the problem was solved.

If you write maker identify as IEN - 8664

HOSE . . Suggestions on handling and installation to extend the service life of rubber hose

Hewitt Rubber Division
238-42 Kensington Ave., Buffalo 5, N. Y.

"Tips on Hose Care" is new 4-page booklet of suggestions on what to do and what not to do in the use and storage of steam, fire, oil, gasoline, water, air, suction and sand-blast rubber hose. Drawings show correct and incorrect methods of installing couplings and correct methods of making a static bond.

If you write maker identify as IEN - 8665

INSULATING . . Application method described in 16-page bulletin for cold-storage room insulation

Owens-Corning Fiberglas Corp.
100 Nicholas Bldg., Toledo 1, Ohio

Dry wall construction method, omitting the use of hot asphalt, is described for freezer rooms in Bulletin I-53-4 on the company's Fiberglas PF low-temperature insulation. It includes sequence pictures, sample specifications, design detail drawings, products employed and makers' names.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

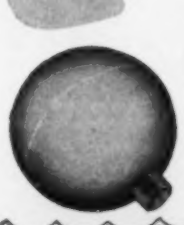
If you write maker identify as IEN - 8666

WHAT DO YOU WANT IN AN INDUSTRIAL FLOAT

Whether you need floats for high or low pressure service, high or low temperatures, corrosion resistance, extreme buoyancy, wear resistance, or for any other special characteristics, you can get it in a high quality stainless steel float from Chicago Float Works. All sizes, and shapes available with *all* standard spud connections.

If your float has to be made up as a special, you can get exactly what you specify from Chicago Float. Over 35 years' experience in the business of building high quality industrial floats is your assurance of the best. Check with Chicago Float today for all your float requirements.

- Standard Diameters 2 to 10".
- Pressures to 1000 lbs.
- Temperatures to 800° F.
- All Standard Spud Connections.
- Top quality Stainless Steels.
- Non-corized weld for superior strength, and corrosion resistance available where required.



Send for complete bulletin on styles, sizes, shapes, spud connections and recommendations.

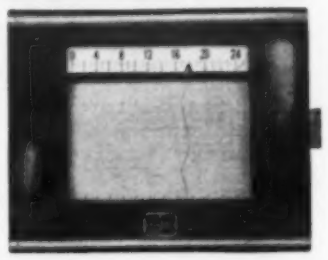
CHICAGO FLOAT WORKS
2326 South Western Avenue • Chicago 8, Illinois

If you write maker identify as IEN - 8667

....WHAT'S NEW AT BRISTOL....

CONTINUOUS STANDARDIZATION with no dry cells

. . . in Bristol Electronic Dynamaster Potentiometers and Pyrometers



• CONTINUOUS STANDARDIZATION eliminates need for dry cells —supplies voltage that is continuously compared with standard cell.

• CONTINUOUS OPERATION—NO TIME OUT. With continuous standardization, the potentiometer is free to continuously measure, record, and control. No time out or interruption is required for periodic standardization.

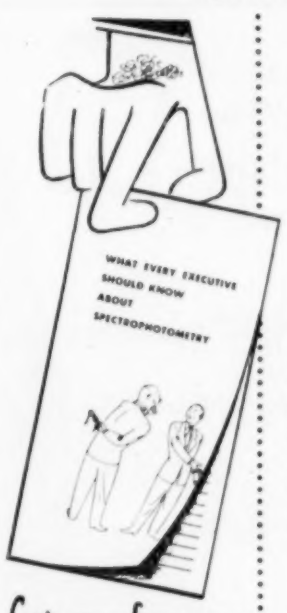
• NO STANDARDIZING MECHANISM. Continuous standardization is taken care of electrically. There is no standardizing mechanism.

For the complete story on the modern Bristol Dynamaster, write for free 35-page booklet P1245. The Bristol Company, 107 Bristol Road, Waterbury 20, Conn. 3.19

BRISTOL THE DEPENDABLE GUIDEPOST OF INDUSTRY

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as IEN - 8668



FREE...

This helpful new booklet on modern Spectrophotometry

By means of a new science — Spectrophotometry — laborious time-wasting analytical procedures are rapidly being replaced with faster simpler methods of analysis and control.

This booklet, complete with color charts, provides a basic summary of the important facts to know about Spectrophotometry . . .

- How light beams and absorption spectra are used to quickly identify chemicals and chemical compounds.
- How to select a Spectrophotometer —what to look for—how to be sure of maximum versatility.
- Where Spectrophotometry is being used in industry—food processing, paints, textiles, medical laboratories, bottle-making, chemical processes of all types, and many other fields.

Get your free copy of this helpful new Beckman booklet now from your nearest authorized Beckman Instrument dealer. Or write for Bulletin 23-5.

BECKMAN INSTRUMENTS control modern industries

Beckman division
BECKMAN INSTRUMENTS, INC.
SOUTH PASADENA, CALIFORNIA
Beckman Instruments include: pH Meters and Electrodes — Spectrophotometers — Radioactivity Meters — Special Instruments

If you write maker identify as IEN - 8669

THE MATEER ELECTRIC FILLER HANDLES THEM ALL!

LIQUIDS • OILS • POWDERS • PASTES

COMBINED LIQUIDS AND SOLIDS

1/500 oz. to 2 pounds
20 to 70 Per Minute
Up to 750° F.

SAVE TIME AND MONEY WITH THE MATEER ALL ELECTRIC FILLING HEAD

Totally enclosed, manual or automatic. Accuracy as close as ±½%. Synchronize this self contained filling head with existing production lines and processing systems.

Jacketed and electrically heated hoppers available for handling cold or hot materials up to 750° F.

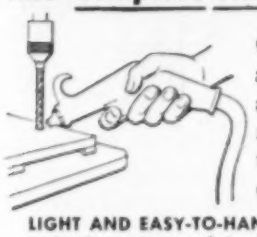
Hot waxes, insulating compounds and asphalts handled without difficulty.

Send full information and samples of material to be tested. Write Dept. 106 for fully illustrated bulletin.

G. DIEHL MATEER & CO.
Lincoln Highway • Devon, Pa.

If you write maker identify as **IEN - 8670**

Only this Quick-Cleaning Bully-Blow Gun has Complete Air Pressure Control



● Where air is used to clear away chips, shavings, filings, and moisture, the exclusive metering trigger produces just the amount of air the operator wants.

LIGHT AND EASY-TO-HANDLE The Bully Blow Gun weighs only 7 ounces and is shaped to fit securely in the hand of the operator.

LAST FOR YEARS Made of high-strength aluminum, the Bully Blow Gun stands up under hard use and won't rust or corrode.

NO UPKEEP NOR REPAIRS Bully metering trigger can not leak, eliminates discs, stuffing boxes and springs. There's nothing to wear out.

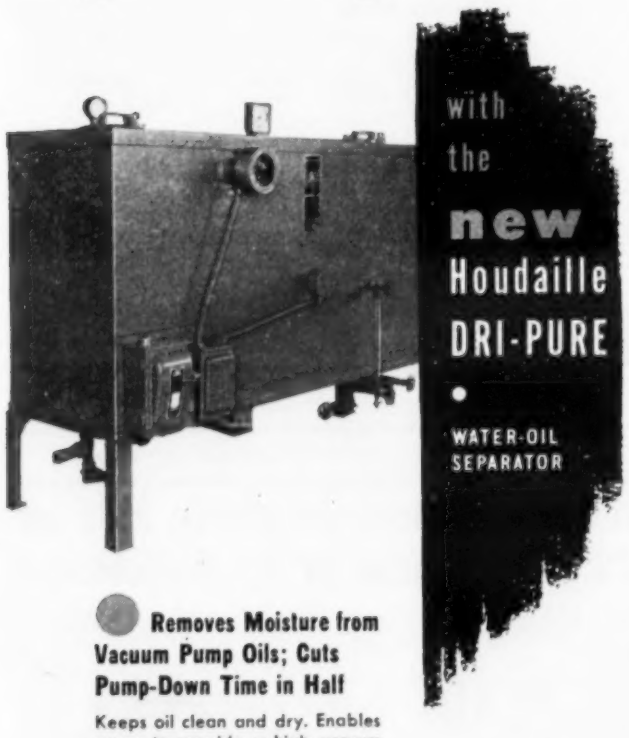
WRITE TODAY FOR DETAILS Complete information available on the Bully Blow Gun, Bully Fulflo Air Filter, and the Big (50 Oz.) and Bantam (22 Oz.) Bully Air Hammers.

Superior Pneumatic & MFG. INC.
4758 WARNER ROAD
CLEVELAND 25, OHIO

If you write maker identify as **IEN - 8671**

cut pump-down time in half!
increase operating efficiency!
of....

Vacuum pumps



Removes Moisture from Vacuum Pump Oils; Cuts Pump-Down Time in Half

Keeps oil clean and dry. Enables pump to provide a high vacuum *without oil change* and eliminates pump "drying out" maintenance!

Eliminates Changing or Discarding Oil; Allows Maximum Pump Operating Efficiency

Increases production due to less downtime. Actually provides *2-way protection*—filtering out contaminants from oil as it separates water!

DRI-PURE is easy to install—can be hooked up to service one or more vacuum pumps depending on the application. *Quickly pays for itself in oil savings alone!*

WRITE TODAY for complete information.
Equipment Bulletin available on request.

HONAN-CRANE CORPORATION
802 Wabash Ave., Lebanon, Indiana
a subsidiary of . . .
HOUDAILLE-HERSHEY CORPORATION

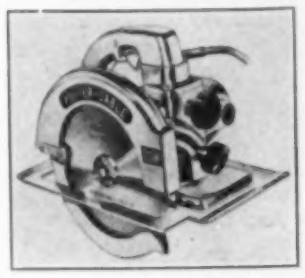
WORLD'S LEADING OIL FILTER MANUFACTURER

In Canada:
E. W. Playford, Ltd., Montreal 28
W. E. Micklethwaite, Toronto 18

If you write maker identify as **IEN - 8673**

WOOD WORKING . . Portable saw, universal motor, takes 9-in. blade

Source: PORTER-CABLE MACHINE CO.
19 Exchange St., Syracuse 8, N. Y.



List is $95

Telescoping guard, opened by a finger lever, and a kickproof clutch, that releases if the blade hits an obstruction, characterize this new Model-108 portable electric saw. The blade can be set to cut square or at an angle to 45 degrees. Cutting capacity is through 2⅛ in. at 45 deg., 2¾ in. when set square. Weight is 13½ pounds.

The frame is made of aluminum with a center loop handle and a trigger switch. The 4,500-rpm. motor is fan cooled. An overhanging vent, at the rear of the guard, ejects saw dust. Several accessory units are available, including a steel table, a radial arm table, a protractor gage, rip and cross-cut guides, abrasive blades.

If you write maker identify as **IEN - 8674**

CLAMP . . Miter frame design adjusts to square or rectangle outline

Source: CINCINNATI TOOL CO.
1953 Waverly Ave., Cincinnati 12, Ohio

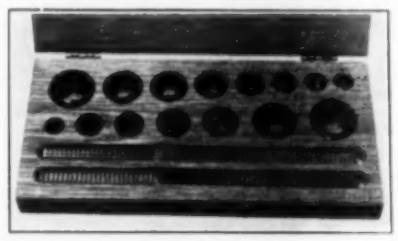
Light, accurate

Aluminum corner blocks, ¼-in. steel screws and knurled nuts make up the assembly of this new Hargrave No. 780 clamp. Four assembly sizes provide maximum openings of 8, 12, 18 and 24 inches. Minimum opening in all sizes is 2 inches. The clamp will hold work true and firm while adhesive sets. It can be used on finished stock.

If you write maker identify as **IEN - 8675**

THREADING . . File type cutter and nut type dies for damaged threads

Source: JAW MFG. CO.
37-43 Mulberry St., Reading, Pa.



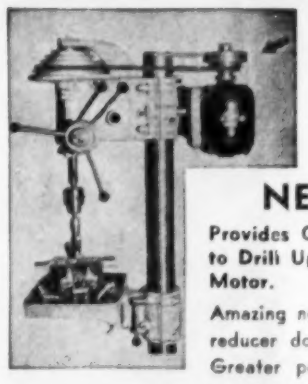
$13 postpaid

Two Nu-Thred files, with teeth to fit threads from 9 to 32 pitch, and fifteen Rethreader dies are assembled in a wood box to make up a new kit of cutters to restore damaged, battered and rusted threads on bolts, studs, shafts, axles. The dies include seven sizes of USS thread, from ¼ to ¾ inch, and eight sizes of SAE thread from ¼ to ¾ inch. Outer dimensions of the nuts are the same as a standard nut of the given size.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8676**

New "PULL-GEAR" SPEED-REDUCING PULLEY Increases Drill Press Capacity



NEW MODEL

Provides Correct Speed and Power to Drill Up to 1⅜" with ½ H. P. Motor.

Amazing new internally geared speed reducer doubles drill press capacity. Greater power, greater efficiency, greater productivity.

Provides the correct speed and power for larger drilling, reaming, tapping and boring on light presses. Easily installed in five minutes. Adaptable to all type machines. Spindle speed range approximately 45 to 2000 RPM. Made in 3 motor shaft sizes: ½"—⅝"—¾". Write for literature.

Some Territories Open to Jobbers

THE PULL-GEAR CO.
4118 E. 8 Mile Rd. Detroit 34, Mich.

WRITE FOR LITERATURE

If you write maker identify as **IEN - 8677**

TO GEAR MANUFACTURERS *Exclusively*

if you produce precision gears of 6" outside diameter or less your files should certainly contain full data on the HAMILTON® Precision Gear Hobber, the machine of exclusive extras.

EXTRA — Hob spindle speeds.

EXTRA — Hob spindle speed ranges.

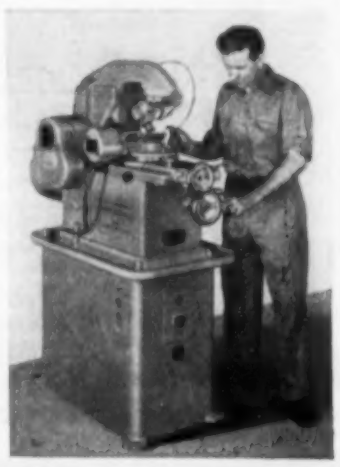
EXTRA — Accuracy of work and hob spindles (to within .0002").

EXTRA — Rigidity, for maintenance of accuracy.

EXTRA — *Independent* selection of speed, feed, indexing.

EXTRA — Maximum accumulative error of .0002".

EXTRA — Speedy set-up and operation, extra flexibility.



Get the complete story. Write for FREE Bulletin GH-5312.

THE *Hamilton* TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

If you write maker identify as **IEN - 8678**

T & B Grounding Sheath Connectors ...VIA GRAYBAR

Send today for free Sample and Bulletin

See for yourself how easy it is to ground and terminate shielded or co-axial conductors. Thomas & Betts manufactures — and Graybar distributes — these sleeve-type connectors for conductors from .058" to .297" in diameter. Ideal for all AF and RF applications.

Simply slip hard metal inner sleeve under conductor braid. Add ground lead and slip on larger soft metal sleeve. Compress with Shure-Stake hand tool and the job is done . . . no soldering . . . no damage to insulation. Also available with integral terminal tongues.

Call your near-by Graybar Representative for complete information on all Thomas & Betts electrical fittings — or for that matter, anything electrical. *Graybar Electric Co., Inc. Executive Office: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.* 880-128

Call Graybar *first* for . . . Everything Electrical GraybaR ELECTRIC COMPANY

If you write maker identify as **IEN - 8679**

NOW... P&H ZIP-LIFT A NEW "ZIP"

*with Rope Control**

ONLY $199.50

Yes, it's here — the famous P&H Zip-Lift Electric Hoist with an amazing new price tag of *only* $199.50.

Now have these advantages —

• *Wire Rope Hoisting*
No troublesome chains or hidden weaknesses! You get free, easy handling with wire rope — and wide range of side pulls, too.

• *New Rope Control*
Handling is simpler with P&H's unique control designed for fast "one-hand" operation.

• *25% Overload Capacity*
This extra safety factor gives an overload margin up to one-fourth above rated capacity during intermittent usage.

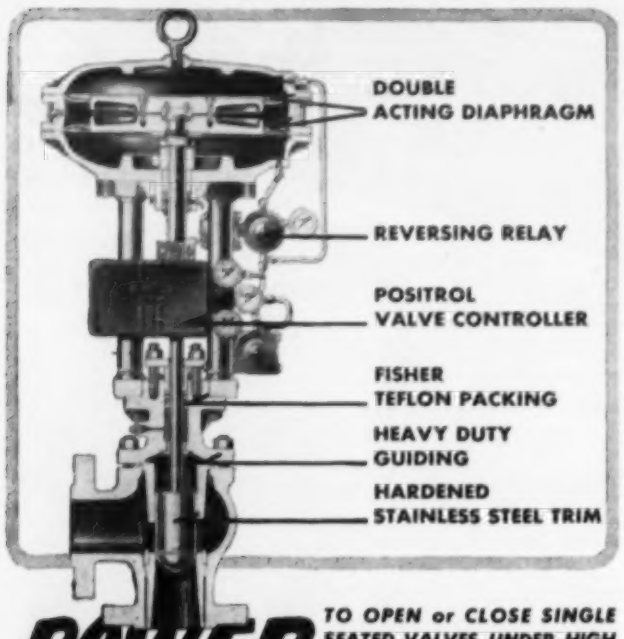
Call your nearby P&H dealer and learn about the latest handling short cuts. He'll show you where and how to cut costs with a "Zip".

Handle it "Thru-the-Air" faster — at lower cost

*Push button control also available as optional equipment

P&H HOIST DIVISION
HARNISCHFEGER CORPORATION
MILWAUKEE 46, WISCONSIN

If you write maker identify as IEN - 8680



POWER TO OPEN or CLOSE SINGLE SEATED VALVES UNDER HIGH PRESSURE DROP CONDITIONS

FISHER AMT*

Fisher Type 5700-458 "AMT" features full pneumatic performance—no springs, no levers or weights. Develops up to 5,000 lbs. stem thrust with 30 lbs. air supply. Designed for fast stroke action. Fully strokes inner valves in 13 seconds. Write for further information.

DIAPHRAGM MOTOR VALVES FOR HEAVY DUTY SERVICE

* AMT "Answer Me Twice". In action, pressure added to one diaphragm, subtracted from other.

FISHER GOVERNOR COMPANY MARSHALLTOWN, IOWA

If you write maker identify as IEN - 8681

Generalift ★★★★★

PALLET BOXES

Send for your Free Copy of "THE GENERAL BOX"

General ★★★★★ BOX COMPANY

GENERAL OFFICES: 1815 MINER STREET DES PLAINES, ILLINOIS

FACTORIES: Cincinnati; Danville, N. J.; Detroit; East St. Louis; Kansas City; Louisville; Milwaukee; Prescott, Ark.; Sheboygan; Winchendon, Mass. General Box Company of Mississippi, Meridian, Miss. Continental Box Company, Inc., Houston

If you write maker identify as IEN - 8682

NEW...IMPROVED!

Stick-Free

Steam Valves

Atkomatic SOLENOID ELECTRIC VALVES

New engineering features prevent "sticking" . . . assures trouble-free operation.

Expansion caused by high temperatures combined with deposits of iron oxide, boiler compound, lime, etc., the common cause of most steam valve failures, no longer affect normal operation. Valve efficiency is increased, maintenance costs reduced, and plant operation improved. Pressures to 150 pounds P.S.I.—temperatures to 400° F.—sizes ¼" to 3".

Write for more complete information

ATKOMATIC VALVE COMPANY
545-A ABBOTT STREET • INDIANAPOLIS 25, INDIANA

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN - 8683

LUBRICATION . . Booklet recommends grades of lubricant to use by type of industry and service

Fiske Brothers Refining Co.
127-31 Lockwood St., Newark 5, N. J.

"Lubriplate Data Book" in revised 56-page 1953 edition presents a series of recommendations on which lubricant to use and where to use it for specific industries from air conditioning to water plants. It gives application information on oil and grease lubricants, and the name of your nearest dealer.

If you write maker identify as IEN - 8684

MAGNESIUM CASTINGS . . Technical data book gives machining instructions and product design suggestions

Hills-McCanna Co.
2347 W. Nelson St., Chicago 18, Ill.

Letterhead request will bring you a copy of the new 48-page Magnesium Alloy Sand Casting Handbook. It describes magnesium alloys for casting purposes, mechanical and chemical properties, tool design for machining, coolants, feeds and speeds, dust collection, surface finishing, thread inserts. Suggestions are given on product design, facilities summarized.

If you write maker identify as IEN - 8685

MAGNETS . . New house publication on permanent magnet design, development and use

Indiana Steel Products Co.
47 Thomas St., Valparaiso, Ind.

"Applied Magnetics" is new publication to be issued bimonthly. Vol. 1 No. 1 presents the first of a series of articles on the design of permanent magnets, a check list for purchasing agents on buying permanent magnets, and an example of use which improved product performance with a saving in cost over former design. Your name will be added to the mailing list on request.

If you write maker identify as IEN - 8686

MANAGEMENT . . Job opportunities in the aluminum industry are outlined in 16-page booklet

Aluminum Association
420 Lexington Ave., Room 1747, New York 17, N. Y.

Types of personnel required and training needed are set forth for plant, office and laboratory in the aluminum industry in new booklet, "Employment Opportunities." It tells about the industry and its growth, emphasizes that the additional jobs are made possible by continuing industry expansion.

If you write maker identify as IEN - 8687

MANAGEMENT . . Your executives will benefit from sharing discussions at AMA workshop seminars

American Management Assocation
330 W. 42nd St., New York 36, N. Y.

Program from August 1953 to January 1954 is published in new 44-page booklet, "AMA Workshop and Orientation Seminars." Each seminar is a discussion or instruction group to bring your executives up to date on such subjects as general management, manufacturing, marketing, personnel, insurance.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8688

IMPORTANT NOTICE

The Genuine MAUSER VERNIER CALIPER

IS NOW MADE OF STAINLESS STEEL THROUGHOUT

The fine finish will not tarnish or deteriorate in many years of use.

NEW #101

$14.75 POSTPAID

. . AND THE FOLLOWING IMPROVEMENTS HAVE BEEN ADDED

★ A SPECIALLY LONG VERNIER to read the thousandths
★ A HARDENED PHOSPHOR-BRONZE adjustable gib retains accuracy
★ 3 EASY READING SCALES • 1/1000" • 1/128" • 1/10 mm. in back

Request Illustrated Folder showing complete line of MAUSER Toolmakers Calipers, Height gages, Bevel Protractors and Tool Stands.

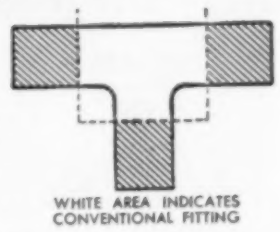
Dealers: Here's a real profitable line!

GEORGE SCHERR CO., INC.
COMPLETE LINE OF PRECISION INSTRUMENTS
200-EN LAFAYETTE ST. • N.Y. 12, N.Y.

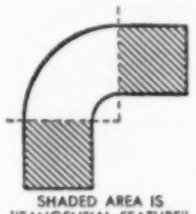
If you write maker identify as IEN - 8689

How the *Speedline* "TANGENTIAL FEATURE" cuts stainless piping costs

Now you can save up to 50% on corrosion-resistant lines by using light wall stainless pipe and versatile *Speedline* Fittings.



The added straight section of corrosion-resistant *Speedline* Fittings permits attaching unions or flanges without fouling . . . reduces number of welds required . . . simplifies installation . . . eliminates angle joints.



SEND FOR LATEST INFORMATION

Write a note on your company letterhead to get the complete story on the many cost-saving advantages of the *Speedline* System for process piping.

Speedline distributors are located in principal cities from coast to coast

HORACE T. POTTS CO. *Since 1815*

534 Erie Avenue, Philadelphia 34, Pa.

If you write maker identify as IEN - 8690

—for "INSTRUMENT-QUALITY" AIR IN COMPRESSED AIR OPERATIONS . . .

HERE'S YOUR ANSWER!

HANKISON MODEL B-30-D *Condensifilter*

Featuring the New-Economical DISPOSABLE FILTER CARTRIDGE

Dehydrate and filter ordinary plant air with a Hankison Model B-30-D Condensifilter for air of "Instrument-Quality." Condenser section removes moisture by lowering dew point of air to within 2 or 3 degrees of cooling water; low cost, disposable filter cartridge with 540 sq. in. of surface area removes even finest dirt particles. Capacity: 30 scfm at 100 psig.

Write for Bulletin B-30-D

For larger capacities, write for data on Model A-100.

HANKISON CORPORATION

350 Baltimore Building • 951 Banksville Road • Pittsburgh 16, Penna.

If you write maker identify as IEN - 8691

If the equipment you design calls for 29.9" of vacuum or 25 psi pressure

READ what your prospects say about LEIMAN Pumps

"Never wear out."

"In almost continuous operation, 24 hours a day for 21 years. Absolutely reliable."

"Requires practically no maintenance care."

Wings in this Leiman Pump take up their own wear, year after year, and always maintain contact with cylinder wall. *See our Listing in Sweet's Product Design File*

Write for 16-page catalog and blueprints of typical applications on Leiman rotary positive pumps—choice of industry since 1889.

LEIMAN BROS., INC.
166 Christie Street Newark 5, N. J.

If you write maker identify as **IEN - 8692**

ROTARY INDEX TABLE

Air operated, 4 to 30 positions

Ten-inch top of Model-H Index Table is rotated by a 2½-inch air cylinder operating on 60 to 175-lb. pressure. It operates positively with no kickback in stopping.

Standard table is supplied with a 4, 6, 8 or 12-station ring. Other rings to 30 indexes will be supplied to order. Speed is variable from 6 to 100 indexes per minute.

Designed for use on punch presses, air or hydraulic presses, drilling machines to handle parts or fixtures for drilling, tapping, staking, trimming, riveting. A Micro switch prevents rotation when locked.

1953 Catalog on request

AIR-HYDRAULICS INC.
809-13 Belden Ave. Jackson, Mich.

If you write maker identify as **IEN - 8693**

an ACCO product

TRU-LAY PUSH-PULL CONTROLS

TRU-LAY Push-Pull Operates Ice Truck Elevator

• Man climbs aboard elevator, throws Push-Pull control lever, and elevator lifts block of ice to desired height. Pulling lever back to neutral stops elevator. Pushing in opposite direction lowers the elevator by bleeding hydraulic cylinder.

TRU-LAY Push-Pulls snake around obstructions, and provide positive remote action over short or long distances. They can even be used on shakers as they operate while flexing. Capacities up to 1000 pounds input.

If you have a remote control problem write our Detroit office today for a copy of DH-287

TRU-LAY PUSH-PULL CONTROLS

ACCO

AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

601 Stephenson Bldg., Detroit 21
2475 Porter St., Los Angeles 21 • Bridgeport, Conn.

If you write maker identify as **IEN - 8695**

HEATING . . Fire pot and torch designed for liquefied petroleum gas

Source: TURNER BRASS WORKS
825 Park Ave., Sycamore, Ill.

Catalog 100

Two tank sizes rate 11 and 20 lb. in the new Turner fire pot assembly. The pot itself rides on the tank or can be employed on a bench top. The pot base is made of cast aluminum. Steel supporting posts mount the cast iron burner. The steel hood is one-piece construction. Operation is at full tank pressure so no regulator is required.

The new torch is packaged in a kit including three interchangeable brass burners and an operating handle for a range of work. It also operates on direct tank pressure. Flame adjustment is by a single valve.

If you write maker identify as **IEN - 8696**

FILTERING . . Expendable element made of fiber discs for engine oil

Source: WM. W. NUGENT & CO.
414 N. Hermitage Ave., Chicago 22, Ill.

Specifications upon request

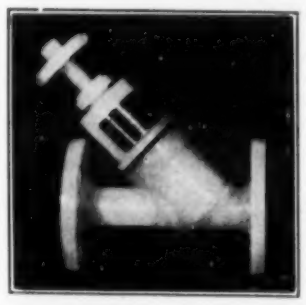
Fiber discs are laminated into a cylindrical element for application in filter bodies handling lubricating oil for diesel engines. The element is expendable design. In a recent test it provided satisfactory service for 3,500 engine hours on a 1,000-hp. super-charged diesel engine, or about twelve times as long as a cotton waste element previously employed.

The laminated discs remove foreign solids down to 1 micron. Absorption of these solids, after 48 hr. of draining at 70 deg. F., is about 2½ times the weight of the element. It will not remove additives from detergent oils since it employs no chemicals, bleaches or diatomaceous earth.

If you write maker identify as **IEN - 8697**

VALVE . . Globe type plastic for corrosive chemicals, ½ to 2 in.

Source: VANTON PUMP CORPORATION
7308 Empire State Bldg., New York 1, N. Y.



The Y Pattern

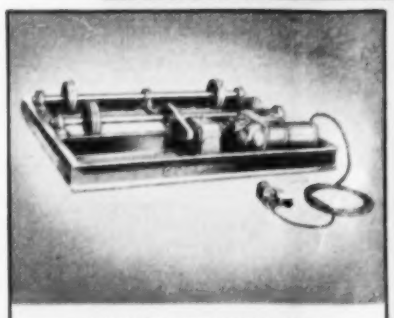
Vanilene designates a new line of polyethylene valves to handle sulphuric, hydrochloric, nitric and hydrofluoric acids and a variety of caustic solutions. Working pressure is to 50 pounds. Temperature is to 150 deg. F. Four available sizes are between ½ and 2 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8698**

REED ENGINEERING COMPANY

Modern Metalworking Equipment



- BENDING ROLLS
- TURNING ROLLS
- AUTOMATIC WELDING FIXTURES

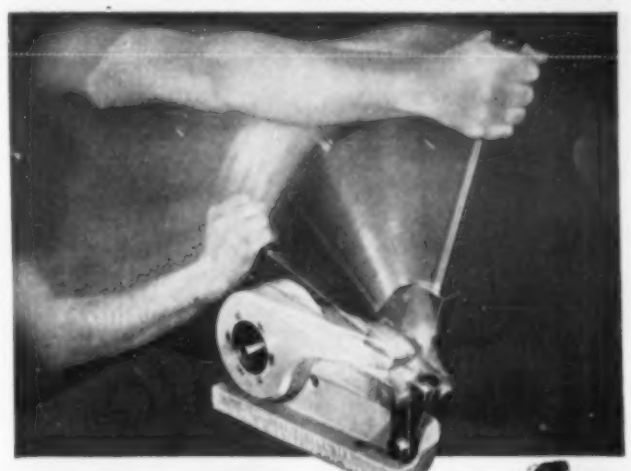
REED RD-20R TURNING ROLL

★ A top-quality production line turning roll for welding, painting and finishing operations on tanks and other cylindrical shapes up to 1-ton, 6 ft. diameter, 12 ft. long
★ Easy-to-adjust reversible variable speed from 10 to 100 IPM
★ Motor and "ON-OFF" foot switch included

WE INVITE YOU . . . to write us for specifications, prices, list of REED users near you. No obligation. Just write on your letterhead.

REED ENGINEERING CO. 1009 W. FAIRVIEW CARTHAGE, MO.

If you write maker identify as **IEN - 8699**



CUT BAR STOCK up to 5/8" Diameter

Accurately, Instantly, Easily with DI-ACRO* ROD PARTER

The DI-ACRO Rod Parter with its shearing-breaking action allows most bar stock to be cut without burr and distortion. Cutting heads accommodate eleven different round stock sizes. Also special heads for cutting square, and other shaped bars.

DI-ACRO POWER ROD PARTER

Instantaneous cutting action. Motor driven flywheel, other moving parts housed in welded steel cabinet.

*pronounced Die-ack-ro

WANT MORE INFORMATION? *Send for 32-Page Catalog*

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MANUFACTURING CO.
318 8th Avenue, Lake City, Minnesota

If you write maker identify as **IEN - 8700**

PROTECT WORKERS AGAINST HARMFUL CONCENTRATIONS OF AROMATIC HYDROCARBONS— BENZENE, TOLUENE, XYLENE

. . . with the NEW

M. S. A. AROMATIC HYDROCARBON DETECTOR

Workers are better protected against harmful concentrations of aromatics when this accurate, compact instrument is on the job. Concentrations are easily and quickly determined on the cylindrical scale which is separately graded for benzene, toluene and xylene. The length of stain, which increases with increasing concentrations permits testing crews to improve ventilation or alert workers when "safe limits" are exceeded.

The instrument is fast and simple in operation, and requires no special training to use. For complete details, write now for Bulletin No. DD-1.

MSA SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES CO.
Braddock, Thomas & Meade Sts.
Pittsburgh 8, Pa.
At Your Service: 76 Branch Offices in the United States

If you write maker identify as **IEN - 8701**

WATSON-STILLMAN

HYDRAULIC POWER TOOLS FOR INDUSTRY

Send for your copy of Bulletin A-S . . . It's Free.

WATSON-STILLMAN FITTINGS DIVISION
H. K. PORTER COMPANY, INC.
Roselle, New Jersey

If you write maker identify as IEN-8702

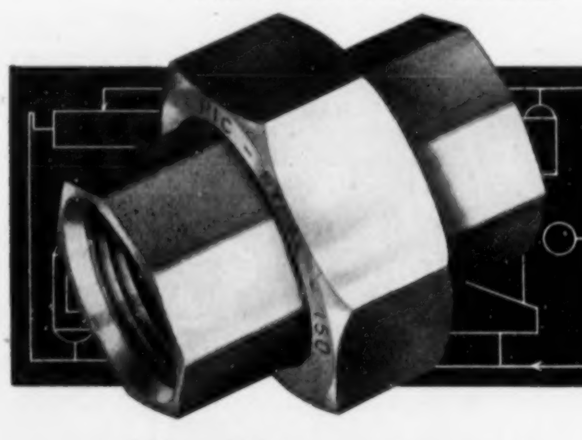
The badge of quality on your product

The users of your product respect the name Marsh on a pressure gauge or dial thermometer. Adopt Marsh Instruments and you will know why they have become "The Standard of Accuracy". There is a Marsh for every service.

Ask for this new catalog... It covers your instrument requirements.

MARSH INSTRUMENT CO., Sales affiliate of Jas. P. Marsh Corporation, Dept. A, Skokie, Ill. Export Dept., 3501 Howard St., Skokie, Ill.

If you write maker identify as IEN-8703



Pics fit your new

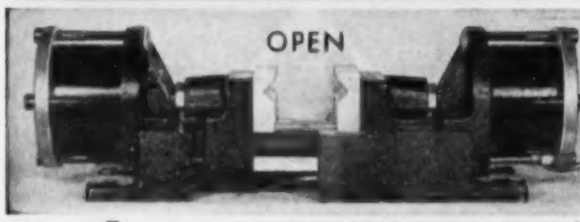
Equipment PICture!

Yes, their eye-catching brightness and strength make these 150 lb. steel unions the choice for original equipment. They go on fast, too, because ends are uniformly flat-sided to accommodate open end wrenches. You can't hurt the steel pipe coupling stock either. Special wedge-type bronze seat for tight seal. Complete zinc plating, even on threads combats rust. Pics cost *less* than a galvanized, *no more* than a black malleable union.

Write for Samples
DART UNION COMPANY
130 THURBERS AVENUE, PROVIDENCE 5, R. I.

If you write maker identify as IEN-8704

BLACK "CENTR-FINDER" VISE



A Precision TOOL

designed to locate centers or other pre-determined points regardless of shape or varying sizes of parts within .001" horizontally or vertically.

Vise jaws travel on guides—actuated by opposed double-acting cylinders—synchronized by mechanical means. Force exerted is all straight line. Clamping pressures up to 2000 pounds. No pressure exerted through synchronizing mechanism. Working range 0 to 4". For centering, drilling, chamfering, hollow milling, deburring, reaming and many other production operations.

write FOR BULLETIN
BLACK DRILL CO., INC. • 1378 E. 222nd St. • Cleveland 17, Ohio

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN-8705

MANAGEMENT . . Ideas on plant maintenance presented in book that reports 1953 Conference papers

Clapp & Poliak Inc.
341 Madison Ave., New York 17, N. Y.

Ideas from all types of industry and from all sizes of plants are presented in the 288-page book, "Techniques of Plant Maintenance—1953," both in the transcripts of formal papers and in the discussion questions and answers. List price is $6. Maintenance costs, equipment and building maintenance, allied problems, special plant maintenance are typical subjects.

If you write maker identify as IEN-8706

METERS . . Booklet suggests uses for company's Model-260 volt-ohm-milliammeter by industry

Simpson Electric Co.
5202 W. Kinzie St., Chicago 44, Ill.

"What is it?" is the first question answered by new 50-page booklet, "1001 Uses for the Model 260," on the company's portable test meter for voltage, current and resistance. "Who uses it?" is answered in detail by suggestions and instructions, many of them ideas from the field, on ways of using the meter in radio, laboratory, aircraft, automobile, telephone, plant maintenance, power plant applications.

If you write maker identify as IEN-8707

PAINTING . . Instructions on brush care from breaking in a new one to cleaning after use

Hanlon & Goodman Co.
4-12 Riverside Ave., Belleville 9, N. J.

Sixth printing makes available a new supply of the company's 24-page instruction booklet, "How to Reduce Brush Costs." Little sketches and text tell what to do before using a paint brush, how to avoid trouble when using a brush, how to clean a brush and prepare it for storage, suggestions on using nylon-bristle brushes, reasons for brush failure.

If you write maker identify as IEN-8708

PLASTICS . . New training course on how to weld and flame-spray plastic materials

American Agile Corp.
P. O. Box 168-A, Bedford, Ohio

Theory and practice are covered in new plastic welding training course given at the company's plant. The course will train operators on structural fabrication of polyethylene and unplasticized polyvinyl chloride, particularly where corrosion resistance is involved. The company will send you information.

If you write maker identify as IEN-8709

SEALING . . Of porous castings is the subject of a typewritten technical report

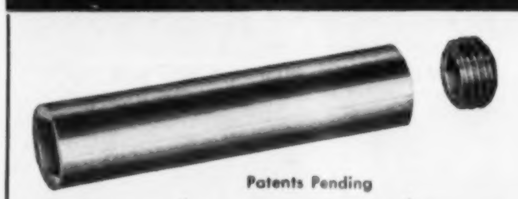
Seal Cast Co.
2111-17 E. York St., Philadelphia 25, Pa.

Chief Metallurgist of a hydraulic-product manufacturer was faced with the problem of 50 per cent rejects for a part due to porous iron castings. He wrote a report on the subject which deals with impregnation by the company's Tincher-Process equipment and the costs involved. Ask for Report I-2.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

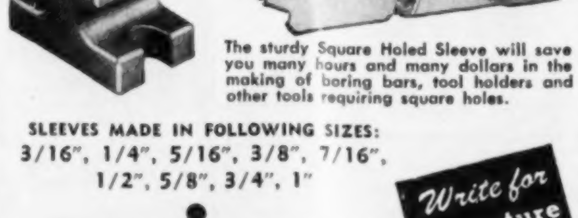
If you write maker identify as IEN-8710

How SQUARE HOLED SLEEVES SPEED UP TOOL-MAKING!



Patents Pending

One of the most difficult problems in tool making can be solved easily and quickly with Sturdy Square Holed Sleeves. The perfection of broached square holes can be had in boring bars, milling cutters and many other applications at a small fraction of the cost of imperfect hand-made square holes. The sturdy Square Holed Sleeve consists of a round sleeve with a perfectly square hole broached through the center. This hole is tapped at one end to receive a back-up screw which is furnished with the sleeve. The sleeve can be sweated or pressed into a drilled and reamed hole to make a perfectly square accurate hole in a very few minutes.



The sturdy Square Holed Sleeve will save you many hours and many dollars in the making of boring bars, tool holders and other tools requiring square holes.

SLEEVES MADE IN FOLLOWING SIZES:
3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8", 3/4", 1"

STURDY BROACHING SERVICE
23516 TELEGRAPH ROAD • DETROIT 19, MICH.

Write for Literature

If you write maker identify as IEN-8711

Star has 'em WHEN YOU WANT 'EM!

STAINLESS STEEL FASTENINGS OF ALL TYPES RIGHT OFF THE SHELF

In-Stock-Service on small or large quantities • Cap Screws • Machine Screws • Sheet Metal and Wood Screws • Set Screws • Nuts, Washers, Etc.
Class 3 AN Drilled Fillister Heads.
Fast service on special screw machine products.

WRITE, WIRE OR PHONE TODAY
New Catalog Available

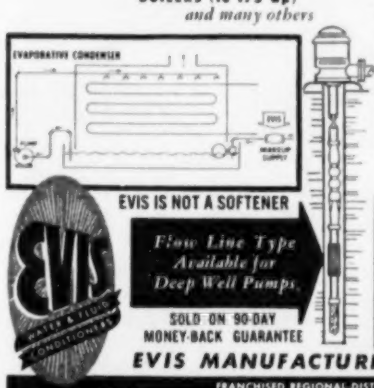
Star STAINLESS SCREW CO.
212 Union Avenue • Paterson 2, N. J.
ARmory 4-1240
Direct NEW YORK Telephone: WIsconsin 7-9041

If you write maker identify as IEN-8712

The Simplest Way to SOLVE SCALE PROBLEMS

Proven Uses Include
ALL PIPING SYSTEMS
CONDENSERS (most types)
COOLING TOWERS
ENGINES & COMPRESSORS
CUBE & FLAKE ICE MAKERS
BOILERS (to 175 wp)
and many others

EVIS Water Conditioners are helping industry conquer its costly scale problems. Plant equipment is made to operate at higher efficiency. Maintenance costs are profitably lowered and shut-downs for periodic clean-ups are often entirely eliminated. The EVIS units are Specially Processed to impart a continuous catalytic action on water-solids flowing through it. This action alters physical behavior sufficiently to inhibit most scale formations. Many thousands of EVIS Water Conditioners are now in service.



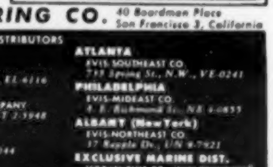
Write for further information or ask your Plumbing Supply, Air-Conditioning-Refrigeration or Industrial Equipment Jobber.

SIZES | 3/8" thru 2" screwed, 2" thru 12" flanged

EVIS IS NOT A SOFTENER

Flow Line Type Available for Deep Well Pumps.

SOLD ON 90-DAY MONEY-BACK GUARANTEE



EVIS MANUFACTURING CO. 40 Boardman Place, San Francisco 3, California

FRANCHISED REGIONAL DISTRIBUTORS

WHITTIER (Calif.) KEN-EVIS COMPANY
SAN BERNARDINO (Calif.) KNUPPE & WRIGHT
SAN FRANCISCO NORTH-EVIS AGENCY, 74 Dorman Ave., MI 7-3822
RENO WATER CONDITIONED SALES CORP., Western Amer. Life Bldg., 2-5619
SEATTLE EVIS-NORTHWEST
CHICAGO EVIS-GREAT LAKES COMPANY
OMAHA EVIS-MIDWEST, INC., 1504 Dodge St., JA 7044
DALLAS EVIS-SOUTHWEST CO., 6817 Chevy Chase, EM 0137
ATLANTA EVIS-SOUTHEAST CO.
PHILADELPHIA EVIS-MIDEAST CO.
ALBANY (New York) EVIS-NORTHEAST CO.
EXCLUSIVE MARINE DIST. MORAN EVIS CO., SAN FRANCISCO, 420 Market St., DO 2-4565

If you write maker identify as IEN-8713

USE ACME ELECTRIC DRY-TYPE TRANSFORMERS TO

ELIMINATE DOUBLE WIRING
DISTRIBUTE POWER AT HIGH VOLTAGE
PROVIDE 3 WIRE SECONDARY CIRCUITS
OPERATE 120 VOLT EQUIPMENT FROM POWER CIRCUITS
BOOST VOLTAGE
BALANCE VOLTAGE
INSULATE CIRCUITS

Available in sizes 1/10 to 167 KVA, 1 phase 60 cycle; 9 KVA to 500 KVA 3 phase 60 cycle. Class "A" and Class "B" insulation.

Write for Catalogs

ACME ELECTRIC CORPORATION
268 WATER STREET • CUBA, N. Y.

Acme Electric TRANSFORMERS

If you write maker identify as **IEN - 8714**

ONLY MOBILIFT

STAND-UP FORK LIFT TRUCKS

Give You

LEV-R-MATIC DRIVE

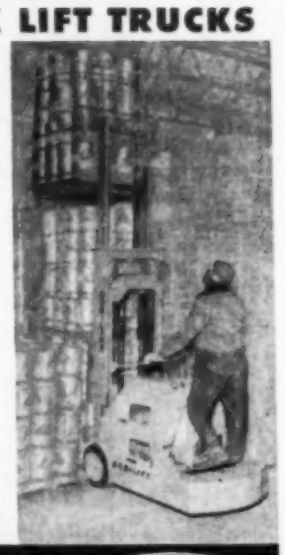
- No Gears to Shift.
- Speeds All Movements.

MOBILIFT MOBILITY

- 360° Steering—ZERO Inner Turning Radius
- Excels in Close Quarters

MOBILIFT STAND-UPS

- Ample size platform.
- On and Off in Seconds.
- All Around Visibility.



To these *plus* advantages add MOBILIFT air-cooled 3-cylinder engine's reliable power and easy accessibility for minimum service and repair... The answer is obvious:

You'll Accomplish More... Work Faster... Earn More with MOBILIFT Fork Lift Trucks. *Write for full information.*

MOBILIFT CORPORATION

MOBILIFT Lev-R-Matic DRIVE

835 S. E Main St., Portland 14, Oregon
2317 W. 18th, CHICAGO • 790 Patterson Ave., E. RUTHERFORD, N. J.
2724 Taylor St., DALLAS • 113 Spring St. N. W., ATLANTA
2730 San Pablo Ave., BERKELEY

If you write maker identify as **IEN - 8715**

SEE HOW *Hapman*

TUBULAR CONVEYORS ARE ENGINEERED FOR LOWER HANDLING COSTS

Get your copy of this new Bulletin

To give you big, long-term savings in conveying bulk flowable materials, Hapman offers many exclusive conveyor engineering features.

Among them are long-lived Sealed-Pin Chain (patented), All-Round Neoprene Flights, Roller Turns for special conditions, and other superior mechanical advantages.

Learn more about them all—and you'll see how Hapman Tubular Conveyors get bulk handling costs *down* and *keep* them down!

WRITE FOR NEW BULLETIN IN-853.

HAPMAN Conveyors handle:
METAL Chips, Sludges, Carborundum Dust — Wet or Dry CHEMICALS: Powdered, Granular, Abrasive, Corrosive—FOODS: Wet Spent Grains, Starch, Flour, Malt —Powered Coal, Ashes, Filter Cake, etc.

Below: Illustration from new bulletin shows conveyor discharging metal chips into tote box.

Hapman CONVEYORS, INC.
DIVISION HAPMAN-DUTTON COMPANY
KALAMAZOO MICHIGAN

If you write maker identify as **IEN - 8717**

WELDING .. Automatic arc machine applies two electrodes simultaneously

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Room 308, New York 17, N. Y.

Bulletin F 8070 A

Wide welds, to bridge gaps in work difficult to fit up, and high speeds are possible with this new Parallel - Transverse feed of two electrodes simultaneously in the company's Unionmelt submerged arc equipment. The double electrode permits use of high current without danger of excessive penetration. Magnetic reactions between the electrodes can be regulated to control the weld shape.

If you write maker identify as **IEN - 8718**

CORDS .. For industrial use to assemble, package, seal, seam, welt

Source: FOX EDGE CO.
2118-22 Middlesex St., Lowell, Mass.

Sample card upon request

Four new grades have been added to the Fox line of industrial cords. The new units are for welting and seaming uses and bring to eight the types of cord in the line for these purposes. All are shown on a display card available on request.

Cords made by the company include types for use on armatures, for belting, cable filler, crack and crevice fillers, gaskets, packaging, parachute shrouds, sound deadeners, strainers, tacking strip, tying, weatherstripping, welting.

If you write maker identify as **IEN - 8719**

SIGNALING .. Electric annunciator indicates normal, abnormal conditions

Source: TIGERMAN ENGINEERING CO.
4330-34 N. Western Ave., Chicago 18, Ill.

Bulletin 400

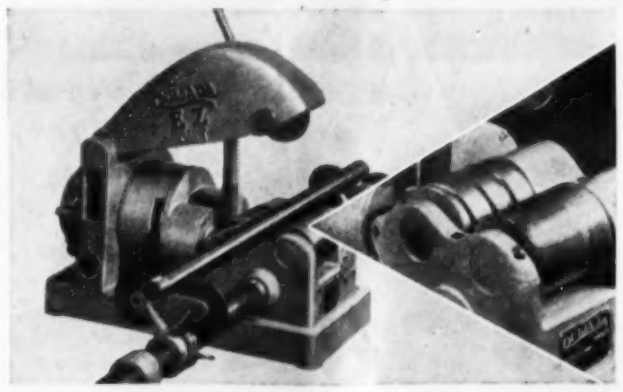
Model 400 Tel-A-Unit is a new self-contained signal alarm in the company's Tel-Alarm annunciator line, previously described IEN-8482-52. The illustration shows three available assemblies, each with horn silencing and lamp reset push buttons mounted on the housing face. The unit requires one mounting hole on a panel.

The three designs include a back lighted engraved nameplate, a turret lens or a bull's eye design with two lamps for sequence signaling. Any number of units can be wired together on a panel to one common power supply and one horn.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8720**

Thousands of Cuts Per Sharpening with Portable Quijada E-Z Cutter



You'll find the Quijada E-Z Cutter the handiest pipe, tube and conduit cutter you've ever used. Weighs only 100 lbs. yet handles all cutting requirements in pipe from ⅜" to 2" (up to 3" in tubing and conduit). You get more cuts per sharpening of cutter wheel because Quijada's patented power driven rollers revolve pipe or conduit for constant cutting...no slipping. Comes with convenient foot switch. Built to last a life-time.

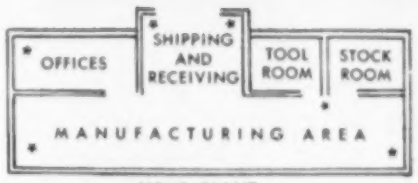
Unconditionally guaranteed by

QUIJADA TOOL DIVISION OF **GAINES-COLLINS**
5474 Alhambra Ave., Los Angeles 32, Calif.
Manufacturers of Automatic Threaders and Cutters for more than a Quarter Century

- **Write today for new catalog IE-8**

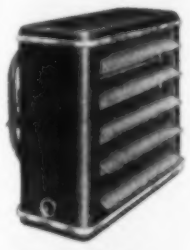
If you write maker identify as **IEN - 8721**

Don't Let CHILLY AREAS* *Hurt Next Winter's Production!*



YOUR PLANT

INSTALL *"Buffalo"* **UNIT HEATERS**



Breezo Fin Unit Heater

"Spot" your heat—even in *hard* to heat small areas—with "Buffalo" unit heaters. They operate on as little as 2 lbs. steam.

Economical "Buffalo" unit heaters have trouble-free copper coils for maximum radiation and efficient "Breezo" fan for positive heat throw. Available in 20 sizes.

Why wait 'til next winter? Solve your heating problems *now.*

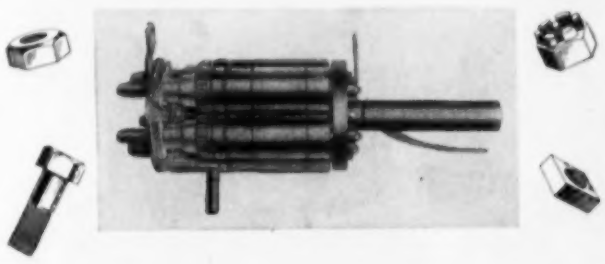
WRITE TODAY FOR BULLETIN 3137

BUFFALO FORGE COMPANY
496 Broadway Buffalo, N. Y.
Publishers of "FAN ENGINEERING" HANDBOOK
Canadian Blower & Forge Co., Ltd., Kitchener, Ontario
Sales Representatives in all Principal Cities

If you write maker identify as **IEN - 8722**

SET FIVE NUTS SIMULTANEOUSLY!

Thor **MULTIPLE NUT SETTERS**



Multiple-unit Thor Nut Setters, engineered to your assembly application, *boost output . . . two, three, five times . . .* with a small investment in tooling, *no extra labor charges.* For complete information on this amazingly efficient Thor development, write Thor Power Tool Company, Aurora, Ill.

Impact Wrenches Assembly Tools Grinders Hammers

TOOL MAKERS FOR SIXTY YEARS

If you write maker identify as **IEN - 8723**

FASTER HEAT TRANSFER for 50% of the COST

with **PLATECOILS**
(REPLACE PIPE COILS)

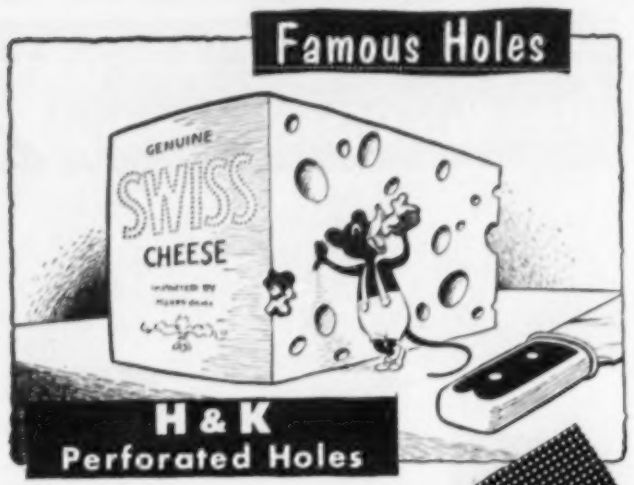
A Platecoil has more heat transfer area than a pipe coil twice its size. Thus it takes only half as much Platecoil to heat a given area. You have 50% less steel to pay for so you can save nearly 50% in initial cost. The Platecoil takes only half as much space in the tank. The greater BTU transfer per unit area of Platecoil also means faster heating or cooling. Platecoils require less maintenance and can be removed without dumping the solution.

Send for complete technical manual and descriptive Bulletin No. P56

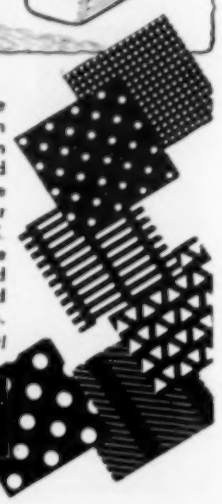
PLATECOIL Division **Tranter Mfg. Inc.**
LANSING 4, MICHIGAN

If you write maker identify as IEN - 8724

Famous Holes



H & K
Perforated Holes



Nature puts the holes in Swiss cheese — large holes, small holes — with no particular pattern in mind. We actually improve on nature when we perforate for our holes are uniformly spaced and precise as to size. So, when you require accurate screens for grading or separating or for any of a thousand other uses, specify H & K. We offer you 70 years of experience, a wide range of hole sizes, shapes and spacings and facilities for perforating any metal, hardboard or plastic available in sheets, plates or coils.

If it can be perforated . . . H & K can perforate it! Ask for our Catalog No. 62

The Harrington & King Perforating Co.

5637 Fillmore Street, Chicago 44, Illinois
114 Liberty Street, New York 6, New York

If you write maker identify as IEN - 8725

COME
Clean with a Clarke

Thirty-five years of Clarke know-how are built into Clarke floor maintenance machines to do your cleaning easier, faster and better. A Clarke does the job month after month without repair expense because it's job-designed and built for years of rugged service. That's why you should investigate Clarke before you consider any other floor maintenance equipment.

WD-23 WET-DRY VACUUM

No cleaning job — wet or dry — is too big for the WD-23 Wet-Dry Vacuum. Heavy porcelainized tank, inside and out, resists rust. Handy dump valve eliminates heavy lifting. Handy attachments available. Model WD-15 for smaller area jobs.

P-17 FLOOR MAINTAINER
(With Water Tank Attachment)

Scrubbing a floor spotlessly clean is no chore for this Clarke P-17 floor maintainer (shown with water tank attachment, available at slight extra cost). Works easily on any type floor.

Clarke SANDING MACHINE COMPANY
284 East Clay Avenue, Muskegon, Mich.
Authorized Sales and Service in Principal Cities

SEND TODAY!

Send this coupon for full, colorful details on Clarke floor maintenance equipment that will save you working time — and money.

Clarke Sanding Machine Company
286 East Clay Avenue, Muskegon, Michigan

Please send me full details on Clarke equipment and the name of my nearest dealer.

NAME _____

ADDRESS _____

CITY _____ ZONE ____ STATE ____

USEFUL INFORMATION
(Concluded)

If you write maker identify as IEN - 8727

FLEXIBLE SHAFTS . . For remote control of valves is subject of 16-page Design Manual

Stow Mfg. Co.
55-59 Shear St., Binghamton 25, N. Y.

Plants and ships are typical applications for the valve-positioning flexible shafts described in Bulletin 528, dated 1952 but just released. Layout drawings to show components, how to select these components, length calculations, dimensions of standard parts and fittings, are typical.

If you write maker identify as IEN - 8728

TESTING . . Instruction booklet on insulation resistance test instrument and its uses

Associated Research Inc.
3762 W. Belmont Ave., Chicago 18, Ill.

Owners of the company's Vibrotest instruments and other qualified personnel will be sent a copy of new 50-page "Vibrotest Manual" on letterhead request. List price otherwise is 50 cents. The booklet tells how to measure electrical insulation resistance of wiring, motors, transformers, and shows how record cards can be used to anticipate trouble.

If you write maker identify as IEN - 8729

TRADE NAMES . . 800 page directory of 15,000 trade names for materials from abrasives to zeolite

Industrial Research Service
653 Masonic Bldg., Dover, N. H.

Three sections comprise new Second Edition of the Handbook of Material Trade Names. First is an alphabetical listing giving properties, uses, maker or distributor, and Patent Office registry. Second is a list by application of the materials, such as abrasives. Third is a directory of some 1,500 manufacturers with the products made. List price is $20.

If you write maker identify as IEN - 8730

WELDING . . Self study course on machine fabrication through the use of arc welding

Lincoln Electric Co.
Box 3035-A, Cleveland 17, Ohio

WelDesign method of creating machine designs in welded steel construction now is offered as a self-study course at a list price of $10. The course includes an instruction manual in which cost of manufacture plays an important part. It also includes a copy of the company's 1,300-page Procedure Handbook of Arc Welding, a cost calculator, a moment of inertia rule, and a set of weld standards for tracing.

If you write maker identify as IEN - 8731

WIRE ROPE . . Elastic properties and effect of temperature change on aircraft wire rope

John A. Roebling's Sons Corp.
612 S. Broad St., Trenton 2, N. J.

New information has been published on the company's aircraft-type wire rope in the form of 12-page Engineering Bulletin 35103-12, "Elastic and Thermal Properties of Roebling Aircord." It presents tables of elastic stretch, load-elongation curves, change in length due to temperature variation, and a method of stress-strain determination.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8732

FOTO-FLO* MODEL C
PHOTO-COPYING MACHINE
New! Speedier! More Economical!

DAYLIGHT OPERATION NO DARKROOM REQUIRED

Makes up to 5 (18" x 24") Prints a Minute of anything written, printed, drawn or photographed

WRITE DEPT. 53-38 for information showing how FOTO-FLO can speed production and lower photo-copying costs.

*Reg. U. S. Pat. Off.

HALOID THE HALOID COMPANY ROCHESTER 3, NEW YORK
Branch Offices in Principal Cities
Photocopy Papers • Photo copying Machines • Photographic Papers

If you write maker identify as IEN - 8733

COMPRESSED AIR AND GAS COME OUT OF THE LOGAN
ARIDIFIER
Scrubbed CLEAN AND DRY

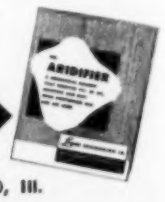
INSTALL ARIDIFIERS ON LINES SERVING

- Paint Spray Guns
- Air Tools
- Air Hoists
- Foundry Jolting Machines
- Sand Blasting Tools
- Sand Blasting Rooms
- Metal Spray Guns . . . or Wherever the line must deliver clean, dry air or gas

On any air or gas line 92% of the dirt, oil, scale and water that enter the Aridifier is trapped and removed from circulation. The Aridifier's patented centrifugal-baffle action scrubs air and gas clean and dry . . . protects equipment, prevents freezing, fouling, corrosion and caking, produces best results with spray gun and air tool operations, etc. Easy to install. Self cleaning. Maintains itself. 10 models available. Capacity 7 CFM to 17,000 CFM.

Learn HOW the Aridifier scrubs with a patented centrifugal-baffle action.

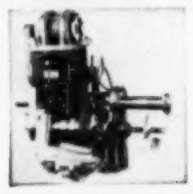
Write for This Catalog Now!



Logan ENGINEERING CO.
4902 W Lawrence Ave., Chicago 30, Ill.

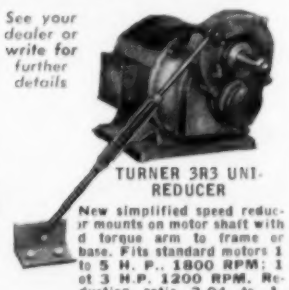
If you write maker identify as IEN - 8734

Sure! Turner can furnish ordinary 3 or 4 speed transmissions — BUT . . . Turner can ALSO furnish 6 or 9 speeds for AS LITTLE AS $10 to $20 ADDITIONAL . . .



Now, for slight added cost you can have 6 or 9 speeds at the "twist of a wrist." Models range from fractional to 60 H.P. Wide range of applications on machine tools as well as other equipment. Write for specification and descriptive catalog.

See your dealer or write for further details



TURNER 3R3 UNI-REDUCER

New simplified speed reducer mounts on motor shaft with d torque arm to frame or base. Fits standard motors 1 to 5 H. P., 1800 RPM; 1 et 3 H.P. 1200 RPM. Reduction ratio 3.04 to 1. Write for information.

TURNER UNI-DRIVE Company
3479 Terrace Street Kansas City 8, Missouri

If you write maker identify as IEN - 8735

VOLTS and AMPS at a glance with the COLUMBIA

Complete with Voltage Leads and Carrying Case

A. C. TONG TYPE VOLT-AMMETER
• Quickly • Accurately • Safely

Columbia Type AC-1 provides ampere readings with a snap by merely clamping jaws around the electrical conductor, without breaking circuit or insulation. Voltage readings are taken quickly and easily with safety plug-in leads. This instrument is one of the Columbia line of tong type instruments of the highest quality and dependability.

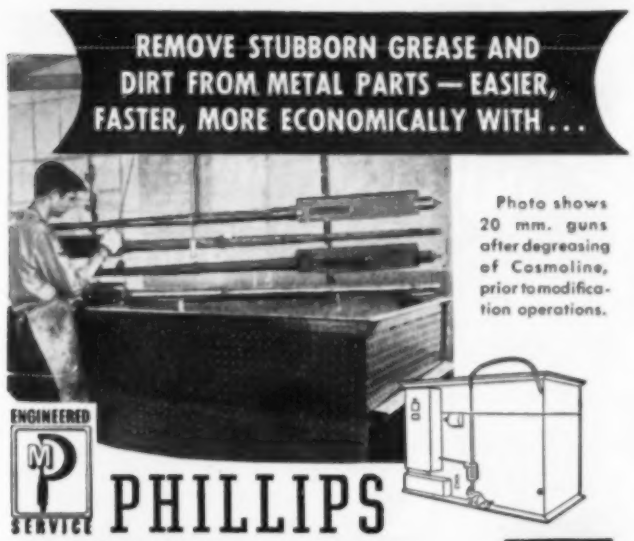
TYPE AC-1 FEATURES

- Measures up to 600 Amperes and 600 Volts.
- Amperes: 0/12/60/120/-600 A.C.
- Volts: 0/150/600 A.C.
- Convenient Range Switch.
- Insulated Jaws will accommodate Conductors up to 1½" diameter, Bus Bars up to 2" x ½".
- Accuracy: 3% full scale.
- Light Weight—Fits Easily into Pocket.
- High Quality at Low Cost.

Inquiries Invited from Distributors • Write for Descriptive Bulletin AC-19

COLUMBIA ELECTRIC MFG. CO. 4519 Hamilton Ave. Cleveland 14, Ohio

If you write maker identify as IEN - 8736



ENGINEERED SERVICE

PHILLIPS VAPOR DEGREASERS

SEND FOR YOUR FREE COPY OF NEW ILLUSTRATED DEGREASER BULLETIN!

THE most heavily greased up parts will come clean easier and faster in a Phillips degreaser. High vapor temperature (250.2° F.) not only causes more dissolved grease to run off the metal, but makes for faster degreasing too. Wherever you have parts to clean, large or small, before plating, painting, rustproofing, service and repairwork, etc., you can do it better, faster and more economically with a Phillips degreaser. There's a standard model to meet your needs. Check with Phillips today.

Phillips 3461 Touhy Avenue • Chicago 45, Illinois
MANUFACTURING COMPANY
Vapor Degreasers • Solvents • Parts Washers

If you write maker identify as IEN - 8737

Handiest selector ever!

Simplifies your job; saves time, speeds choice of right fastener. Easy to read, easy to use, handsomely lithographed in red, white and blue. Shows various tubular and split rivets, part catalog number, normal clinch allowance, size of clearance hole in work and other details to aid your product manufacturing. Sturdily riveted together for lasting use.

Write for yours today!

EST. 1919
MILFORD

The name to *RIVET* in your memory for fasteners.

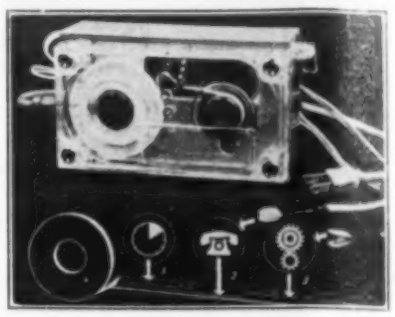
THE MILFORD RIVET & MACHINE COMPANY

927 Bridgeport Avenue, Milford, Conn.
876 Illinois Avenue, Aurora, Ill.
1156 W. River Street, Elyria, Ohio
76 Platt Street, Hatboro, Penn.
751 So.Palm Avenue, Alhambra, Calif.

If you write maker identify as IEN - 8739

TIMING . . Two events recorder for open and closed circuit intervals

Source: ALDEN ELECTRONIC EQUIPMENT CO.
653 Alden Research Center, Westboro, Mass.



Phantom view

Three stylii make independent traces, by means of a minute electric current on Alfax electrosensitive tape, in this new recorder when they are actuated by miniature external switches. The tape is driven by a motor that plugs into a 110-volt ac. power circuit. Tiny bosses, on the back of the take-up reel, act as internal switches in the unit to provide the time markings made by one of the stylii. Two independent traces are actuated by external miniature switches normally opened or normally closed.

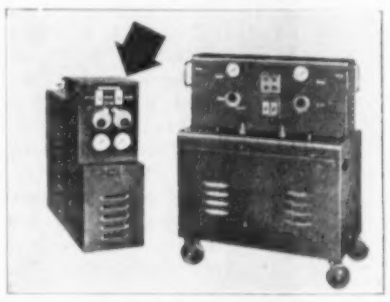
Two operations, that can be timed and recorded, are indicated in the illustration by the telephone and the pair of gears. Lifting the receiver from its hook closes one circuit. Closing the motor circuit to a machine also closes the second normally open switch to trace duration of the machine operation.

Events can be separated by a minimum 1/6 sec. duration. The plug-in motor driven can be applied for various ranges that will run a magazine out in an interval from a few hours to eight days. The tape and recorder mechanism are assembled in a plug-in magazine to replenish the tape in the field.

If you write maker identify as IEN - 8740

HEATING . . Portable electric unit circulates hot and cold water to dies

Source: STERLING INC.
3744 N. Holton St., Milwaukee 12, Wis.



It heats and cools

Duplicate water tanks are mounted in the housing of this new Model-6003 temperature control unit. The tanks are equipped with immersion heating elements, thermostats, thermometers and circulating pumps. Connections, at the back of the housing, provide for ½-in. hose lines leading to and from the molds in a plastic forming press or to other equipment at which temperature requires control. Connections also are provided, with modulating temperature control valves, to circulate cooling water. Pressure at the source for this water maintains flow, pumps being employed in the hot water circuit only.

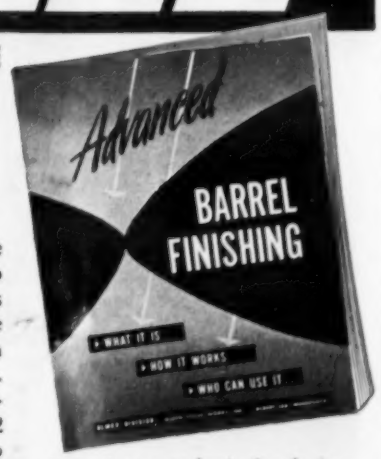
Electric elements, for heating, rate 9,000 watts each. Pump rating is approximately 5 gpm. each through a 30-ft. length of ½-in. hose. Heating control range is 60 to 210 deg. F. Cooling control range is 80 to 170 deg. F. The new assembly is designed for restricted space. It is illustrated beside the larger portable Model 6002, previously described IEN-3416-51.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8741

FREE

IF YOU PRODUCE PARTS THAT REQUIRE FINISHING OF ANY KIND



This amazing 22-page booklet is *guaranteed* to open your eyes! Gives latest, up-to-the-minute facts — figures — photos on advanced barrel finishing. Shows how single unit installation replaces from 2 to 12 men—*savings up to 95%* on almost all types of parts from large castings to small intricate parts.

Investigate today! Send for your FREE copy of Booklet No. G-8 today.

ALMCO Supersheen
AMERICA'S LARGEST MANUFACTURER OF ADVANCED BARREL FINISHING EQUIPMENT — MATERIALS AND COMPOUNDS
ALBERT LEA, MINNESOTA

If you write maker identify as IEN - 8742

50 TON HYDRAULIC PULLER

Removes or installs bearings, gears, pinions, shafts, studs, wheels, pulleys, etc.—75% faster and 90% easier. This new OTC 50 ton ram is completely portable (weighs only 45 lbs.)—has remote control pump—interchangeable ram heads—and can be used as a production holding fixture. Also available in 17½ and 30 ton sizes. *Booklet describes complete line and uses of OTC equipment.*

WRITE FOR FREE BOOKLET

OWATONNA TOOL COMPANY
371 CEDAR STREET • OWATONNA, MINN.

If you write maker identify as IEN - 8743

the Safer Hammer that Saves the Surface!

• New IDEAL Cush'N-Blo Hammers are true SAFETY tools, designed and engineered to give you better soft-face hammer performance—*and save you money at the same time!*

Formulated of special plastic, the replaceable tips outwear ordinary soft-face materials —often by more than 10 to 1. They cannot chip or mushroom under heaviest blows—or "let go" flying particles to endanger workers. Tips are *spark-proof* and securely locked into *spark-proof* heads. They are not affected by oil, grease, gasoline or ordinary industrial acids.

Cush'N-Blo Hammers are carefully balanced for maximum accuracy and driving force. They turn out *more* work and *better* work with minimum effort because they reduce fatigue by reducing rebound.

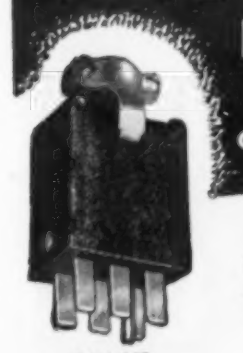
SOLD THROUGH LEADING DISTRIBUTORS
See Them Now or Mail Coupon for Full Information

• A HAMMER FOR EVERY JOB
5 Diameters
14 Weights
Regular or Shot-Loaded

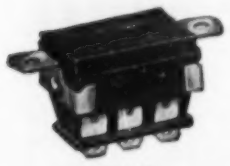
IDEAL INDUSTRIES, Inc.
1108 Park Avenue, Sycamore, Illinois
Please send catalog data and full description of your Cush'N-Blo Hammers.
Name_____
Company_____
Address_____
City_____ Zone____ State____

If you write maker identify as **IEN - 8745**

FOR PUBLIC ADDRESS, RADIO, and kindred fields, specify JONES 400 SERIES PLUGS AND SOCKETS *of proven quality!*



P-406-CCT



S-406-AB

Double Contact Area

Phosphor bronze knife-switch socket contacts engage both sides of flat plug contacts.

Socket contacts phosphor bronze, cadmium plated. Plug contacts hard brass, cadmium plated. Insulation molded bakelite. Plugs and sockets polarized. Steel caps with baked crackle enamel. 2, 4, 6, 8, 10, 12 contacts. Cap or panel mounting.

Information on complete line, in Jones Catalog 18: Electrical Connecting Devices, Plugs, Sockets Terminal Strips. Write

Send for complete data on this new basic improvement!

Jones — HOWARD B. JONES DIVISION, CINCH MANUFACTURING CORPORATION, CHICAGO 24 ILLINOIS, SUBSIDIARY OF UNITED-CARR FASTENER CORP.

If you write maker identify as **IEN - 8746**

ARE YOUR PLANT AND FACILITIES BURIED?

Model 218

Plants and machinery buried in dirt and debris won't meet our country's increasing production demands. Keep your plant clean at all times.

Doyle Vac-Its are vital to your defense programs. Write Doyle today. No obligation.

Doyle VACUUM CLEANER CO.

2235 Stevens St., S. W. Grand Rapids 7, Michigan

If you write maker identify as **IEN - 8747**

BUILDING DOLLARS GO FARTHER

Industrial users find that Armco Steel Buildings save money 3 important ways.

1. Quick, easy erection is assured with a small unskilled crew. Unique STEELOX construction provides both structural support and finished surface.
2. You get trouble-free service at low cost. Armco Steel Buildings are noncombustible and lightningsafe when properly grounded. The STEELOX Joint can't open up or pull apart. Your building remains rigid and weathertight year after year.
3. Ideal for permanent or temporary sites. Should conditions change your building can easily be extended, doors and windows rearranged, or it can be moved to a new location without loss of material.

WRITE FOR THE COMPLETE MONEY-SAVING STORY

ARMCO DRAINAGE & METAL PRODUCTS, INC.

1333 Curtis Street, Middletown, Ohio

If you write maker identify as **IEN - 8748**

PRESS . . Power bending brake for sheet metal, 6 and 8 ft. lengths

Source: **SERVICE MACHINE CO.**
200 Miller St., Elizabeth, N. J.

Die holder included

Capacities are for sheets to 14 and to 16 gage, in the company's new 6 and 8-ft. motor driven bending brakes, based on full length 90-deg. bends. Each machine is driven by a 1½-hp. motor, with adjustable variable speed transmission, for operation at 16 to 40 strokes per minute.

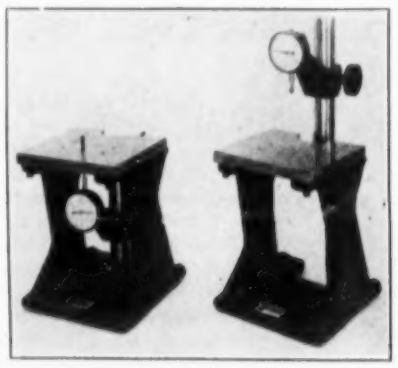
The press stands 79 in. in height, 44 in. from front to back and 66 in. in frame width. The ram and bed plates measure 72 and 96 in. in the two models. Shut height is 12 inches. Stroke is 3 in. and stroke adjustment is 4½ inches. List prices are $2,975 and $3,175.

Rotating parts ride on ball or roller bearings, except the alloy bronze bearings on the eccentric type crankshaft. The ram and welded steel frame are both normalized. The alloy steel adjusting screws carry buttress threads and revolving alloy bronze nuts. One complete revolution of the adjusting handle moves the ram through 0.008 inch.

If you write maker identify as **IEN - 8749**

GAGE . . Bench type comparator for height, thickness, diameter, depth

Source: **MYER CORPORATION**
631-35 Park Ave., Cranston, R. I.



For production use

Dial indicator, reading on both sides of a zero setting, mounts on a column at the rear of a hardened steel plate in this new Model TD-5 Acra-Ment comparator. The column and gage can be positioned above or below the plate as shown in the illustration. The plate assembles on a base made of Meehanite Metal. Threaded holes are provided to position gaging fixtures and work holders. Initial setup is to gage blocks or a master work piece.

If you write maker identify as **IEN - 8750**

If you are a user of the balancing ways made by Anderson Brothers Mfg. Co., 1905-9 Kishwaukee St., Rockford, Ill., you can purchase a new fitted plastic cover to protect the equipment when it is idle. The cover is durable and can be washed. It lists at $1.60 a pair for the 20-in. size, $1.85 for the 40 and 60-in. sizes of the balancing ways.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8751**

NOW! Compare Electric Trucks Before You Buy!

Lewis-Shepard Comparison Charts give you a chance to make your own unbiased, visual comparison of electric trucks *before* you buy. Checklist chart lets you itemize merits of each truck. We're sure that when you compare the facts you'll agree—Lewis-Shepard Trucks are genuinely superior. Ask for "Proof Folders" and Catalogs, too. *Write today!*

LEWIS-SHEPARD®

1033-8 WALNUT ST., WATERTOWN 72, MASS.

Nationwide Service — See "Trucks, Industrial" in your Yellow Phone Book

MULTIPLY MANPOWER · LEWIS-SHEPARD

The MASTER® Line

If you write maker identify as **IEN - 8752**

GRIES CUTS COST AND TIME!

TINY INJECTION MOLDED PRECISION PLASTIC PARTS

Completely automatic . . . parts delivered trimmed, ready for use, in one operation, with Gries' speedy, specialized production facilities.

NYLON A SPECIALTY.

INDIVIDUAL PARTS
No limit on smallness. Intricacy and precision — our unique features.

INDIVIDUAL INSERTS
Automatic insert feed permits wide variety of product possibilities.

CONTINUOUS INSERTS
Small members accurately spaced on tape, cord, wire chain, etc.

Maximum Size: .025 oz.—1¼" long
NO MINIMUM

LOW MOLD COSTS

Write Today for Demonstration Samples

GRIES REPRODUCER CORP.

139 Beechwood Avenue, New Rochelle, N. Y.
Phone NEw Rochelle 3-8600

If you write maker identify as **IEN - 8753**

MULTIPLE BENDING SAVES DOLLARS

Here is a Pedrick Production Bender producing five identical frames simultaneously. These savings can be yours too with a Pedrick bender. Multiple bending is adaptable to almost all bending operations, including pipe, tube, reinforcing bars or structural shapes.

Smaller and larger machines available.

Write for descriptive folder

PEDRICK TOOL & MACHINE CO.

3640 N. Lawrence St., Dept. 7, Phila. 40, Pa., U. S. A.

If you write maker identify as **IEN - 8754**

VERTICAL or HORIZONTAL

THE MOST *COMPACT CONVEYOR* FOR BULK MATERIALS

FORT WORTH Screw Conveyors and vertical Screw Elevators provide the most compact means of conveying or elevating bulk materials, such as grain and other free flowing products. Space occupied is less than half that of most other types of conveyors.

Vertical screw elevators are used to lift materials up to 70 feet, depending on the nature of the product.

Initial cost is low.
A minimum amount of upkeep is required.

WRITE FOR CATALOG 2008

OTHER FORT WORTH PRODUCTS: V-BELT DRIVES, SCREW CONVEYORS and ACCESSORIES, SCREW ELEVATORS, INDUSTRIAL FANS

FORT WORTH STEEL & MACHINERY CO.

DEPT. 28, 3600 McCART ST.
FORT WORTH, TEXAS

If you write maker identify as IEN - 8755

You can provide easy mobility to a variety of industrial products with

IRONBOUND ALL-PURPOSE HANDLING UNITS . . .

POPULAR IRONBOUND FLO TRUK

● An easy to handle ruggedly constructed unit for carrying bulky and heavy loads at lowest cost. Seven standard sizes with one or two push handles makes it easy to select the proper truck for your requirements. Ask an Ironbound engineer for suggestions.

The HANDY for furniture and similar items. **The HAULER** for cases, crates, tote boxes, etc. **The HUSKY** for general use throughout the plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

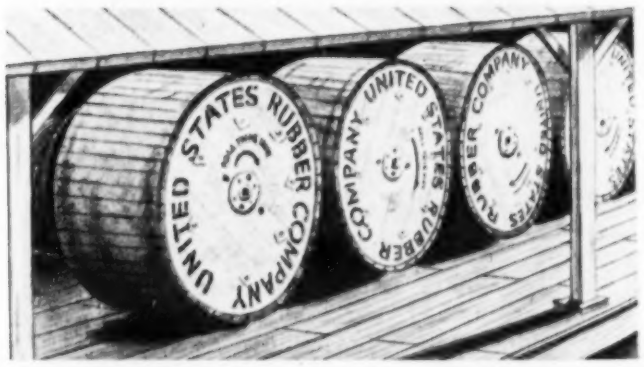
Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as IEN - 8756

How to prolong the life of wire and cable by proper storage



1 **Protect cables from the weather.** Moisture is especially injurious to fibrous coverings. When stored out-of-doors, if they become wet and then freeze, they will be weakened and the saturant will flake off. In humid weather, mold growth is accelerated, weakening the covering and making it easier to damage the cable during installation. (Rubber and thermoplastic insulated and jacketed cables may be stored under moderately humid conditions.) The larger sizes of fibrous covered and rubber jacketed cables and all lead-sheathed rubber insulated cables must be stored on reels which must be properly lagged—or the cable must be otherwise suitably protected against mechanical damage. Reels can be stored out-of-doors if the cable is protected against sun and weather, and the ends are properly sealed.

2 **Don't expose wires and cables to extremes of temperature.** Chemical reactions occur at a higher rate at high temperatures than low. The greatest deterioration of low-voltage cables is due to chemical changes, oxidation or internal changes in the compound itself. Never store reels in the boiler room unless you use a fan to blow hot air away from the wires and cables. It's best to store cables at room temperatures indoors out of direct sunlight. Rubber insulated cables may be stored and handled without damage at the lowest temperatures ordinarily encountered, but thermoplastic synthetic insulated cables should not be handled at temperatures below –10 C. (14 F.)

3 **Reels should be kept off the ground,** so that moisture will not harm the cables, reel flanges and lagging. Sound reels are easier to handle and there is less chance of injury to the cable as it is removed from the reel.

4 **Coils should be stored one layer deep on the floor or shelves,** with the axis either horizontal or vertical. To save space, they may be stacked, but not more than 5 coils in height—otherwise there is harmful pressure on the insulation. Don't remove brown paper or box that protects against dust and light until used.

5 **Rubber insulated fibrous covered, rubber jacketed or lead-sheathed cables in storage** should never be bent to a diameter less than I.P.C.E.A. recommended diameters. Never let coils or reels drop more than a few inches. Always roll a reel in the direction indicated by the arrow on the flange. When rolling an unlagged reel, put planks under the flanges to avoid pressure on the cable. Coils, reels and spools should always be rotated when wire and cable is removed to avoid twisting the cable.

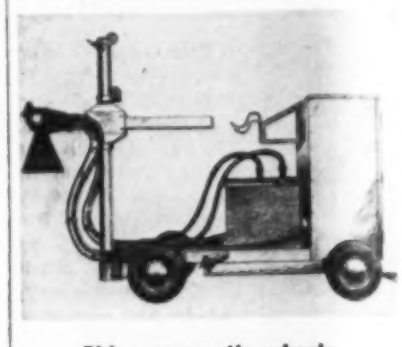
FOR FREE REPRINTS, WRITE TO ADDRESS BELOW.

UNITED STATES RUBBER COMPANY
Electrical Wire and Cable Department
ROCKEFELLER CENTER • NEW YORK 20, NEW YORK

If you write maker identify as IEN - 8758

TESTING . . Mobile X-ray unit for radiographic inspection of big work

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.



Rides pneumatic wheels

The tube in this new Model-413 X-ray equipment is mounted on a horizontal radial arm. It, in turn, is adjustable in a horizontal circle as well as vertically on a support column. Minimum distance, tube head to floor is 36 inches. Maximum is 108 inches. Horizontal adjustment is through 48 inches.

The carriage includes a protecting cab for the operator and carries the 250-kv. transformer to operate the tube. Capacity is 4½ in. of steel or greater thicknesses of materials of less density.

If you write maker identify as IEN - 8759

SOLDERING . . Powdered flux for aluminum as well as other metals

Source: INSULATION & WIRES INC.
1533-37 Swinney Ave., Fort Wayne 6, Ind.

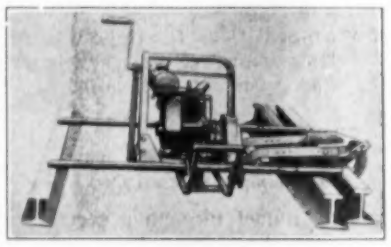
Test sample upon request

Aluma-Flux is a new powdered material made by Essex Wire Corporation. It is being marketed by the company for manual, dip or mechanical soldering operations. The flux reduces surface oxides initially and then deposits a thin layer of plating material over the solder area to prevent oxidation in this area. The flux reacts completely during the soldering operation so there is no corrosive residue in the finished joint. Packaging is in metal containers.

If you write maker identify as IEN - 8760

DRILLING . . Engine driven machine for use on all sizes of railroad track

Source: BUDA CO.
15401 S. Commercial St., Harvey, Ill.



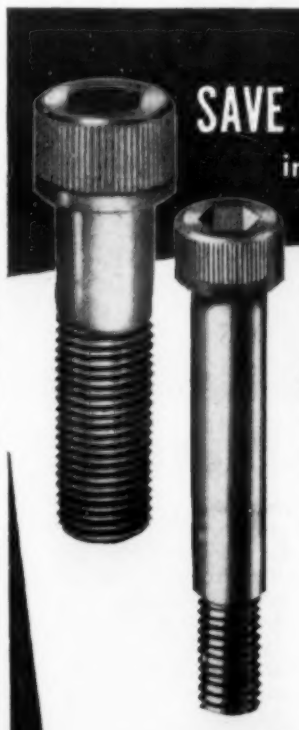
For one man use

Support arms for this new design of engine driven track drill are telescoping in design to 45 inches. They are detachable to assist in carrying the machine from one location to another. The gasoline engine drives the drill head. The drill is fed forward by a chain connected hand crank. Filler blocks, as well as rails, can be drilled with the aid of a two-position hook and its safety over-clutch for quick release. There is no need to block up the drill or level off ballast.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8761

See How To
SAVE TIME AND SPACE
in Die Assembly



DANLY

CAP SCREWS AND STRIPPER BOLTS

Easy-to-grip knurled socket head permits quick finger driving with minimum wrench tightening. Key-type socket facilitates quick "drawing-up" in awkward locations and allows more compact assembly. Precision machined . . . high-grade alloy steel . . . heat treated for optimum hardness and strength.

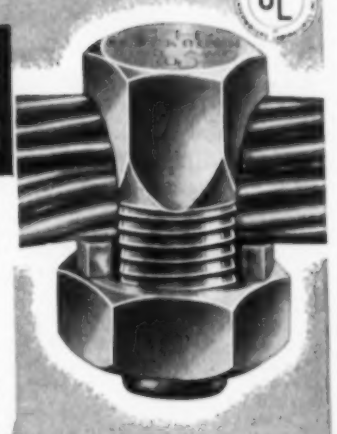
Send For This *FREE* Bulletin Today!

DANLY MACHINE SPECIALTIES, INC.
2100 South Laramie Avenue • Chicago 50, Illinois

If you write maker identify as IEN - 8762

Make BETTER CONNECTIONS with HIGH PRESSURE!

BLACKBURN *Hi-Strength* CONNECTORS



Avoid "loose joint" trouble and the cost of running it down; use BLACKBURN Hi-Strength Connectors! Tests show that they definitely produce higher pressure connections — *trouble-free* connections. It costs less to use the best — use BLACKBURN. UL Approved from No. 10 to 1,000,000 CM.

JASPER BLACKBURN CORPORATION
33 MADISON ST., ST. LOUIS 4, MO.
Phone CEntral 3007

If you write maker identify as IEN - 8763

Fewer drills per 1000 pieces . . .

MORE HOLES PER DAY

on small diameter drilling jobs

DUMORE Automatics reduce drill breakage, downtime, scrap . . . give hair-line accuracy to measured depths.

Size of drill and hardness of material determine speed and pressure at drill point. Each stroke is automatically controlled. Drills cut smoothly, uniformly, retain their edge longer, produce burr- and ridge-free holes in hard or soft material.

This is only one of the many tools in the Dumore line. For complete information see your local industrial distributor or write:

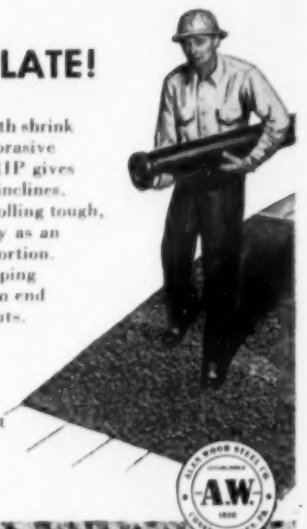
Air Line Drill Head—Takes drills from No. 60 to 11/64.

Weighs 17½ lbs. Completely automatic.

DUMORE PRECISION TOOLS
The Dumore Company
1319 Seventeenth Street • Racine, Wisconsin

If you write maker identify as IEN - 8764

REDUCED INSURANCE PREMIUMS PAY FOR THIS SAFETY FLOOR PLATE!



Accident rates *and* insurance rates both shrink when you install A. W. ALGRIP Abrasive Rolled Steel Floor Plate. For ALGRIP gives non-skid foot safety—even on steep inclines. We make this unique floor plate by rolling tough, abrasive grain densely and uniformly as an integral part of steel plate's upper portion. *Result:* Hundreds of tiny, hard-gripping safety brakes in every footstep put an end to costly, dangerous slipping accidents. And your consequent savings on insurance premiums pay for your ALGRIP installation.

Get the full story of savings from safety today. Send for the facts about tough, fire-and-breakage-resistant, non-slip ALGRIP. The handy coupon brings you our new Booklet.

A.W. ALGRIP *Abrasive Rolled Steel Floor Plate*
ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

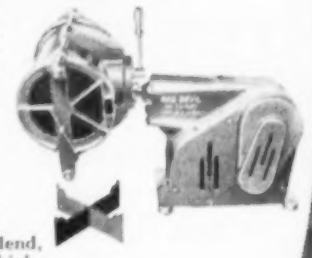
I want to know more about savings from safety. Send me your ALGRIP booklet AL-5.

Name _____
Company _____
Address _____
City _____ *Zone* _____ *State* _____

If you write maker identify as **IEN - 8765**

better paint job with Red Devil Paint Conditioner

Paint pepped up by Red Devil Paint Conditioners goes on more smoothly, and better protects your product. Patented 3-directional motion puts pigment in perfect suspension—quick!



NOT JUST PAINT

Manufacturers of everything from printers' ink to putty use these machines to mix, blend, and rejuvenate all kinds of high-viscosity and low-viscosity mixtures.

If you have hard-to-mix, *or hard-to-keep-mixed blends,* Red Devil can arrange to have test samples agitated at a nearby location.

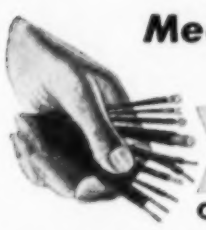
Various models provide automatically-timed agitation for ¼ pint to 5 gal. cans. Attachments for round and square containers.

Red Devil Catalog No. 21M lists all Red Devil three-way agitators and Red Devil floor maintenance machines. Write Red Devil Tools, 129 Coit Street, Irvington, New Jersey.

Products of 1868 **Red Devil Tools.** 129 COIT ST. IRVINGTON 11, N. J. U. S. A.

If you write maker identify as **IEN - 8766**

Measure, Cut and Strip Insulated Wire



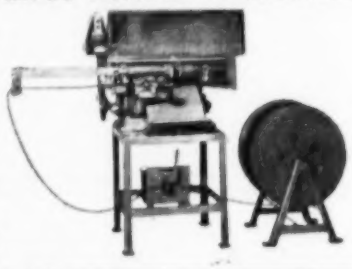
IN ONE SPEEDY OPERATION

ON ARTOS *Automatic* MACHINES

Does your production require cutting and stripping of insulated electric wire, cord, cable, etc.?

You can produce finished leads *much faster* . . . as many as 3000 per hour in 15-in. lengths . . . on this Artos Automatic Machine. Substantial time savings are obtained over the best manual or semi-automatic methods.

Operation is fully automatic—wire is taken from the reel, measured, cut to length and stripped at one or both ends. Unskilled help can handle the machine. Set-up is easy for different wire types and lengths.



MODEL CS-6E CAPACITY

FINISHED PIECES PER HOUR—From 3000 per hour up to 15 in. lengths to 500 per hour in 64-97 in. lengths.
MAXIMUM STRIPPING LENGTH—1½ in. at each end (greater stripped lengths are special).
MAXIMUM CUTTING LENGTH—97 in.
MINIMUM CUTTING LENGTH—2 in. (also as short as ⅞ in. under certain conditions).
TYPES OF WIRE HANDLED—Solid or stranded single conductor wires, parallel cord, heater cord, service cord, etc.
MAXIMUM WIRE SIZE—No. 10 stranded or No. 12 solid.

Other Artos Machines

The complete line of Artos automatic wire cutting and stripping machines will handle cut lengths from 1 in. to 60 ft., stripped lengths to 6½ in. at one end and 8½ in. at the other, wire from No. 12 to No. 000 gauge, and up to 3600 pieces per hour. Ask for recommendations on your problems.

WRITE FOR BULLETIN

Get the complete story—write for Bulletin 35-C on Artos Model CS-6 machines.

Automatic Wire Cutting and Stripping

ARTOS ENGINEERING CO.

2749 S. 28th St. • Milwaukee 46, Wis.

If you write maker identify as **IEN - 8767**

Now find motor coil shorts POSITIVELY and INSTANTLY...

New CROWN INTERNAL GROWLER

- Anyone can use it
- No Chance for Error!
- Meter Tells the Story!
- For AC Motors

POSITIVE . . . meter needle indicates short in coils of stators or armatures and reveals loose bars in rotors

FAST . . . No time wasted with hack-saw blades or guesswork. "Pinpoints" the location.

EASY . . . no training or experience needed. Meter gives the answer.

• CHECKS 115V. to 440V, stators 6" and up I.D., armatures or rotors 6" to 14", operates on 115 V. AC.

MAIL FOR COMPLETE DATA

CROWN INDUSTRIAL PRODUCTS CO.
715 Amsterdam Street
Woodstock, Illinois

Please send full catalog information about the New Crown Internal Growler to:

Name_____
Company_____
Street_____
City_____ Zone____ State_____

If you write maker identify as **IEN - 8768**

PRINTING . . Photocopy machine, exposes, develops and delivers print

Source: HUNTER PHOTO-COPYIST INC.
564-68 Spencer St., Syracuse 4, N. Y.

Cast aluminum case

Prints are made on sheets to 14 in. in width of material that has been written, typed, drawn or printed on translucent or opaque sheets by this new Hecco-matic machine. It employs two sheets of sensitized paper, one serving as the exposure negative and the other as the final positive.

The two are entered face to face into the developing compartment after the negative and original have passed through the exposure compartment. They move through the developing solution and then between drying rolls to issue together. They are peeled apart and the positive is ready for use. A cycle takes about 45 seconds.

If you write maker identify as **IEN - 8769**

LAYOUT . . Granite surface plate, plain edges, sizes to 3 by 4 feet

Source: COLLINS MICROFLAT CO.
2324-28 E. 8th St., Los Angeles 21, Calif.

Available nationally

By omitting the clamping edges on the surface plates previously described IEN-1969-52, the company has made available a new line of plates, particularly suited for layout work, at a lower price than was required for plates with the clamping provision. Four sizes in the new line measure 12 by 18 by 3 in. to 36 by 48 by 6 inches. Standard accuracy is within 0.0002 in. per foot. Rate ranges from 75 to 1,140 pounds. List price is $49 to $378.

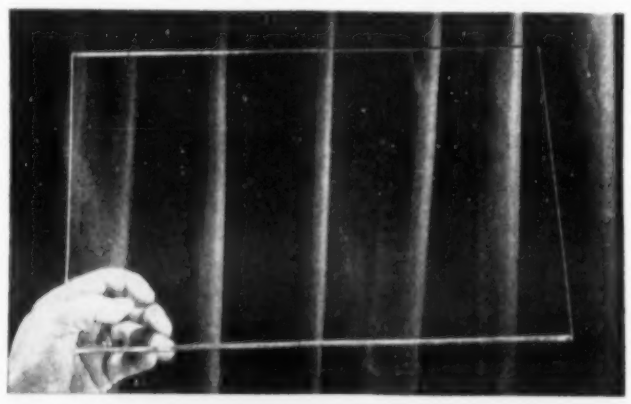
The plate will not rust, warp or deflect. It can be washed. It is inert to temperature change. Surface accuracy is not impaired by a nick since the area surrounding the edges of the nick will not rise.

If you write maker identify as **IEN - 8770**

If you need an underground tunnel through a section or two of your plant, you can build it without disturbing the surface with the aid of the Tunneliner now available from American-Marietta Company in Chicago. Tunneliner is an oval reinforced pipe that comes in sections. Because it is oval, one piece can be passed through another. Accordingly you can start your tunnel and line it as you go. Inside heights range from 42 to 118 inches. Widths are 27 to 80 inches. Address is 99-103 E. Ohio St., Chicago 11, Ill.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8771**



INVISIBLE STRENGTH

Above is a picture of glass so tough that a 1½-lb. steel ball, dropped 10 feet, will bounce right off. It can carry far more load, resist greater thermal shock than ordinary glass. Yet you can see through it just as clearly. Think of the places you can use *Tuf-flex** Tempered Plate Glass in your product or production process. Order *Tuf-flex* from your nearby L·O·F Distributor. Write today for your free *Tuf-flex* booklet (TF-8). Libbey·Owens·Ford Glass Company, 9283 Nicholas Building, Toledo 3, Ohio. *®

LOF GLASS PLASKON FIBER-GLASS

LIBBEY · OWENS · FORD GLASS COMPANY

If you write maker identify as **IEN - 8772**

Would a Welded Component solve your design problem?

Rings?
Bands?
Weldments?

Today every major U. S. jet engine manufacturer is a user of American Welding rings, bands, or components.

We do not know what jets, guided missiles or rockets you are working on, but we feel sure that our 34 years of welding experience can be helpful in getting your designs "off the blueprint—into the blue".

We can provide designing, engineering, metallurgical and machining facilities. If your requirements involve either fusion or resistance welding of ferrous or non-ferrous metals, we will be glad to have our Product Development Department look into your problem.

THE AMERICAN WELDING & MANUFACTURING CO.
160 DIETZ ROAD • WARREN, OHIO

If you write maker identify as **IEN - 8773**

Prescription for battery buyers!

Make your job of specifying and buying industrial truck batteries easier by writing for C & D's latest bulletin. It's chock-full of details and specifications covering C & D's complete line of industrial truck batteries. Ask for Bulletin IT-520.

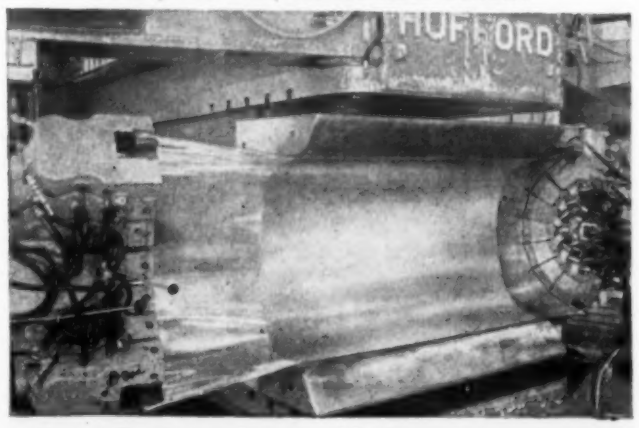
C&D BATTERIES, INC.
of Conshohocken, Pa.
406 WASHINGTON STREET

If you write maker identify as **IEN - 8774**

Better skin fits—Lower costs with

Hufford Hydra-Curve...

The jaws with the flexible action!



Especially designed to simplify formation of all parts stretch-formed from sheet stock. Jaw curves easily match convex, concave or compound die curves. HYDRA-CURVE JAWS cut material costs as much as 30%—pay for themselves in material savings alone! Many aluminum parts now formed in ST condition—no heat-treat necessary. Useful on shallow curves, a *necessity* on most deep curves! *Adaptable to most sheet stretch-presses. Sizes for all Huffords.*

Write for new folder!

HUFFORD *Machine Works Inc.*
EL SEGUNDO, CALIFORNIA

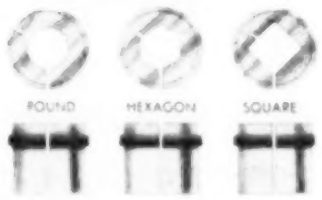
If you write maker identify as IEN - 8775

HARDINGE ELMIRA, N.Y.

Style "S"

SURE-GRIP Master Collets and Pads

Pads are interchangeable among different machines with same capacity. Available for all sizes of the following machines up to and including 3½" capacity:



CLEVELAND
CONE
GREENLEE
GRIDLEY & ACME-GRIDLEY
NATIONAL ACME
NEW BRITAIN

HARDINGE BROTHERS, INC., ELMIRA, N. Y.

If you write maker identify as IEN - 8776

proved by 16,000,000 Cycles

SNAP-LOCK

TRADE MARK

LIMIT SWITCHES

Four out of five machine tool builders use Snap-Lock limit Switches. On some machines you'll find as many as 75 units.

That kind of acceptance is proof of dependability in use. But it's no surprise to us—we proved it to ourselves first—by putting a Snap-Lock on breakdown test. The test machine got tired after 16,000,000 cycles—the Snap-Lock was still going strong.

That's why we say, when you're looking for a dependable limit switch—look to Snap-Lock. May we help you engineer them for your particular job?

ELECTRICAL FEATURES

Accessible wiring connections, self wiping coin silver contacts, no arcing, heavy insulation throughout, oil and dust resistant case. Single pole, double break, double throw — positive lock in ON or OFF position.

MECHANICAL FEATURES

Hardened steel parts, strong spring, rugged, compact construction, wide choice of operating levers. Snap-Lock is guaranteed mechanically and electrically for any normal circuit application.

ENGINEERING BULLETIN EM-51

gives complete engineering specifications for all types of standard Snap-Lock switches, styles of mountings, operating levers — or better still, ask our engineers to cooperate with yours on special applications.

ELECTRICAL MANUFACTURING DIVISION

The NATIONAL ACME Co.

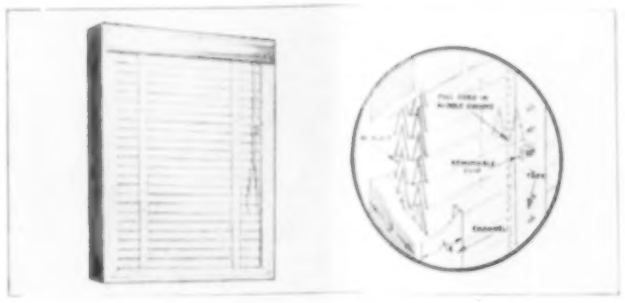
178 EAST 131st STREET • CLEVELAND 8, OHIO

Acme-Gridley Bar and Chucking Automatics: 1-4-6 and 8 Spindle • Hydraulic Thread Rolling Machines • Automatic Threading Dies and Taps • Limit, Motor Starter and Control Station Switches • Solenoids • Contract Manufacturing.

If you write maker identify as IEN - 8778

BUILDINGS . . Blackout blind, free ventilation with total darkness

Source: VICTORY PLASTICS CO.
653 Apsley Ave., Hudson, Mass.



Lowers to close

M-shaped slats nest one upon another in this new Vendark blackout blind. The assembly provides an impenetrable barrier to light when it is in closed position. At the same time it permits free circulation of air between the slats. They are made of styrene plastic that will not chip, peel or fade and that are not affected by contact with weak acids, alkalis and alcohol. Cleaning is with warm water and soap. The blind and frame can be supplied to fit any window dimensions. Finish is in permanent dull black.

If you write maker identify as IEN - 8779

CLEANING . . Non-flammable solvent for electric equipment, fabrics, film

Source: PENETONE COMPANY
Box IEN-653, Tenafly, N. J.

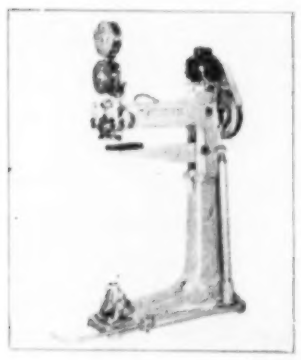
Free sample on request

Penolene 643 is a new solvent to take the place of carbon tetrachloride as a cleaning medium. It leaves no film or residue, dries in about 15 seconds. It is a little more toxic than kerosene. It will not damage fabrics or electric insulation.

If you write maker identify as IEN - 8780

STAPLING . . Motor driven machine forms and drives two staples at once

Source: BOSTITCH INC.
1009 Mechanic St., Westerly, R. I.



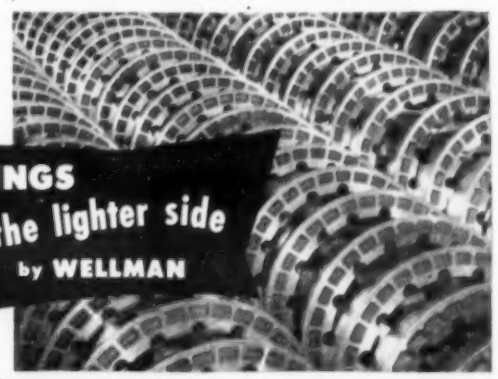
Feeds from two reels

Three models are available in the company's new duplex head box stitcher. Each will drive and clinch two staples at one time on 2½-in. spacing at the rate of 250 strokes per minute. Throat is 25 in. deep.

Model JU is an arm type machine for use in making up large cartons. Model JGU employs a bottom post to close carton bottoms. Model JGUH is a combination arm and bottom stitcher for use in plants where there is a large volume of both types of carton stapling work.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8781



CASTINGS on the lighter side by WELLMAN

If you're thinking along the lighter side about the whole subject of magnesium and aluminum castings, think about Wellman as a source.

Let us show you how our four complete plants and almost a half century of experience can help you. Write for our new catalog No. 53.

Well-Cast MAGNESIUM AND ALUMINUM CASTINGS
Well-Made WOOD AND METAL PATTERNS

THE WELLMAN BRONZE & ALUMINUM CO.

Dept. 9, 12800 Shaker Boulevard Cleveland 20, Ohio

If you write maker identify as IEN - 8782

STALE AIR

increases your overhead

Eliminate this loss! Get a free bulletin that shows how to plan efficient exhaust fan installations, plus specifications of Emerson-Electric Exhaust Fans. Send today for Bulletin No. 727.

THE EMERSON ELECTRIC MFG. CO.
St. Louis 21, Mo.

EMERSON ELECTRIC
FANS • MOTORS APPLIANCES

If you write maker identify as IEN - 8783

Here's how to SAVE TIME in SETTING-UP and KEEPING your MACHINES LEVEL

Fast Accurate Self-Aligning Machine Leveler

Empco JACK

Empco Jacks enable you to meet hurry-up demands for relocation of machinery by giving you the fastest, easiest, most accurate machine leveling ever known: you simply raise or tilt machine sufficiently to allow the Empco Jacks to be slipped under base. The number of jacks required depends on weight of machine and size of base. Once set on Empco Jacks, the entire operation of leveling and maintaining equipment level is quickly done. By applying a wrench to the "hex" head of adjusting screw, an adjustment is obtained either up or down until your level indicator reads "zero." Write for specifications and prices today.

Vibration absorbing mounting pads increase machinery life.

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

If you write maker identify as IEN - 8784

THIS BOOK TELLS YOU HOW TO SAVE MONEY

—repointing dipper teeth
—rebuilding and hardfacing worn grousers
—welding manganese steel
plus many unique applications for manganese steel flats, rounds, squares and plate.

AND IT'S FREE!

AMSCO
389 E. 14th Street
Chicago Heights, Illinois
Please send me the book on Amsco Manganese Steel Weldments—WA-77

Name _____
Address _____
City _____ State _____

AMERICAN Brake Shoe COMPANY — American Manganese Steel Division
389 EAST 14th STREET • CHICAGO HEIGHTS, ILL.

If you write maker identify as IEN - 8785

G. E. announces . . .

NEW RIGID CONDUIT

NEW G-E WHITE

Now! A brand-new G-E WHITE rigid steel conduit, featuring easy bending, easy wire-pulling, and improved corrosion protection. A rigidly tested zinc-coating process, "metallizing," bonds a controlled, uniform coating of pure zinc to the conduit, threads and all, without hardening it. New G-E WHITE is lined with a corrosion-resistant coating containing an anti-friction agent for easier wire-pulling. Try it on your next job. Section C29-842, Construction Materials Division, General Electric Company, Bridgeport 2, Conn.

You can put your confidence in—

GENERAL ELECTRIC

If you write maker identify as IEN - 8786

3 reasons why DeLuxe Steel Shelving costs you less

The real cost of shelving is the erected cost

1. **Fewer Parts**—DeLuxe has designed one part where ordinary shelving uses three. Example, our bin-type "I-Beam" upright. *Fewer parts mean fewer man hours to install.*
2. **80% Less Bolts**—DeLuxe shelving uses patented, boltless shelf brackets, thus requires *no tools* for either installation or adjustment.
3. **100% Adjustable**—Shelves in each section are independently adjustable, without disturbing other contents. DeLuxe shelving erects on the spot, in position where you want it . . . the only shelving that does all this.

There is a DeLuxe factory representative in your area who will give you our engineering, planning and layout service without obligation. Write today for free catalog.

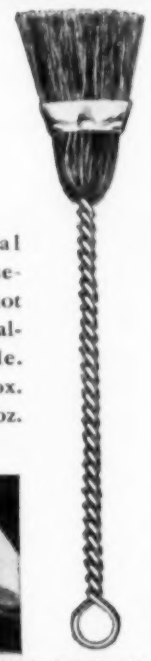
DELUXE METAL FURNITURE CO.
303 Struthers St., Warren, Pa.

For over 25 Years Manufacturers of: Storage Shelving
Library Shelving • Storage Cabinets • Shop Equipment

If you write maker identify as IEN - 8787

Mechanic's Chip Brush

- Improved Design
- More Efficient
- Longer Lived
- Acid Resistant
- Alkali Resistant
- Lower Priced



● Genuine natural horsehair bristles securely locked, cannot pull out. 12 gauge galvanized wire handle. Packed 2 doz. per box. Price, $3.00 per doz. F.O.B. Rockford.

CLEANING T-SLOTS

APPLYING COOLANT

WRITE FOR CATALOG SHEET

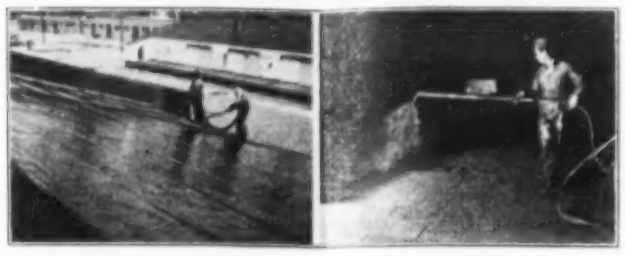
STANDARD AND SPECIAL TWISTED-IN-WIRE BRUSHES
- ONE BRUSH OR A CARLOAD -

SEE YOUR MILL SUPPLY DEALER OR WRITE
Biltwell Brush Co.
225 S. CHURCH ST. • ROCKFORD, ILLINOIS

If you write maker identify as IEN - 8788

INSULATING . . Asphalt materials for roofs, walls, ducts, cold storage

Source: AMERICAN BITUMULS & ASPHALT CO.
202 Bush St., San Francisco 4, Calif.



For cold spray application

Fibercoat is a new material in the Laykold line of asphalt base materials for surface protection, insulation, and to apply as an adhesive for insulation in refrigerated spaces. It is a compounded asphaltic emulsion with mica filler for use on smooth surface asphalt roofs and metal surfaces. It is available in red, green and black. Application is cold by brush, squeegee or spray. The completed coating will withstand long periods of exposure to salt-spray, sun, rain, snow, industrial fumes, heat.

Insulation Adhesive, a second new material in the Laykold line, is a heavy-bodied asphaltic emulsion, free from fire hazardous solvents. It is designed for cold brush or spray application. It is used to make a vapor barrier with asphalted papers, fabric, felt, glass, fiber and metal foil. It will hold flat roof deck and duct insulation, when the latter is adequately banded. It serves as a seal for perimeter insulation around concrete floor slabs.

If you write maker identify as IEN - 8789

STORING . . Steel cabinet designed to hold miscellaneous supplies

Source: PENN METAL CORP. OF PA.
50 Oregon Ave., Philadelphia 48, Pa.

For office use

Stationer is a new steel storage cabinet made of furniture steel with welded frame and dust tight reinforced doors. The doors are equipped with chromium handles and a built-in lock. They are secured at three points in closed position. Four shelves are standard. Finish is in gray, or office green, employing baked enamel. Overall dimensions are 36 by 18 by 78 inches.

If you write maker identify as IEN - 8790

A flame spray gun, to preheat steel and then to feed, melt and flow porcelain enamel on the surface, is about ready for field use by Seaporcel Metals, 28-22 Borden Ave., Long Island City 1, N. Y. The gun is designed for use on structures too large to move to an established porcelain enameling installation. Bridges, vessels, buildings are examples.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8791

NEW Tinnerman Push-On *Speed Nuts*®

Available Now ...at a NEW LOW COST!

Start by hand...

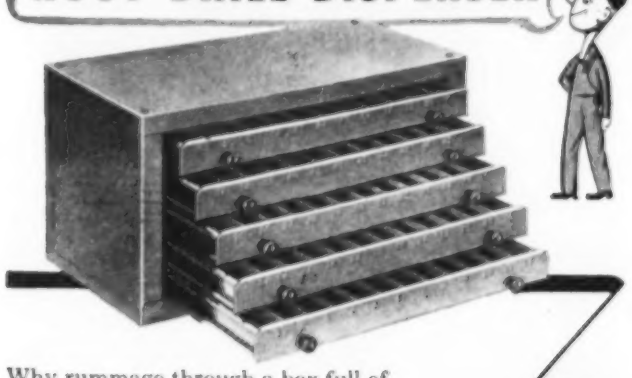
Zip down on Studs!

A newly created line of standard Spring Steel Push-On type SPEED NUTS now available at an average price reduction of 25%! This is made possible by large volume, high-speed production. Tinnerman, originators of Push-On type SPEED NUTS, has developed the C12000 Series to fit all popular stud sizes, round, D-shaped, and rectangular. They meet most application requirements . . . are available in rust-resistant finish. For full cost-saving details on these new low-cost SPEED NUT brand fasteners, see your Tinnerman representative, or write direct to:

TINNERMAN PRODUCTS, INC.
Dept. 12, Box 6688, Cleveland 1, Ohio

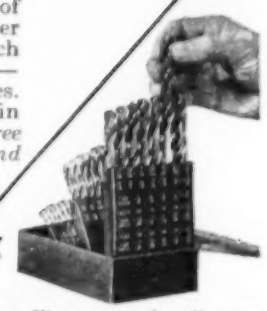
If you write maker identify as IEN - 8792

Drills at your fingertips— HUOT DRILL DISPENSER



Why rummage through a box full of drills when the Huot Drill Dispenser will keep them sorted by sizes? Each compartment holds many drills—several dozen in the smaller sizes. Beautiful light gray hammerlin baked enamel finish. *Made in three models for fractional, number and letter drills.*

Write for Drill Dispenser Bulletin



HUOT DRILL INDEX

The simplest filing system for all twist drills. Panels fold into container like pages of a book. Seventeen models for drills from No. 80 wire gauge to 1-inch size.

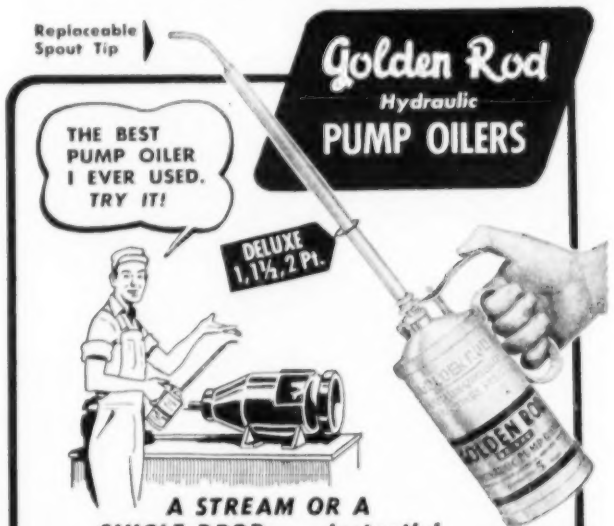
HUOT

HUOT MANUFACTURING CO.
565 North Wheeler Street, St. Paul 4, Minn.

If you write maker identify as IEN - 8793

Replaceable Spout Tip

Golden Rod *Hydraulic* PUMP OILERS



A STREAM OR A SINGLE DROP . . . instantly!

- Volume determined by thumb-pressure.
- Exceptionally rugged, heavy welded steel.
- DELUXE—Capacity: 1, 1½, 2 Pt.
- Guaranteed for 5 Years!
- Thumb-pressure starts oil flow instantly.
- Up to 250 lbs. tip pressure.
- Replaceable Spout Tip.
- 3 spout types—straight, angle or flexible.

Order from your Mill Supply Jobber

DUTTON-LAINSON CO.
Dept. EN-3 HASTINGS, NEBR., U.S.A. Since 1886

If you write maker identify as IEN - 8794

the *New* SAF-I-FLEX with Grid Vents and Replaceable Lens

FRAME—Crystal Clear VINYL frame permits wide-angle side vision. Velvet Soft—Fits contour of all faces snugly. Inside edge of frame rolled for more comfort and better fit. Generous grid vents for full ventilation.

LENS—Optilite ® Lens meets Federal Spec. for optical qualities and impact resistance—available in Crystal Clear or Green. Lens quickly and easily replaced—locks securely in frame. Extra large lens area—fits over most styles of personal glasses.

WRITE FOR LITERATURE AND PRICES

UNITED STATES SAFETY SERVICE CO.
KANSAS CITY 6, MISSOURI BRANCHES IN PRINCIPAL INDUSTRIAL CITIES
In Canada PARMELEE, LTD. Toronto—Montreal

If you write maker identify as IEN - 8795

ENAMELSTRIP

STEEL · ALUMINUM · BRASS · PRE-FINISHED COLOR COIL

assures a perfect finish

before fabricating

You can easily cut production time and cost with Enamelstrip, the continuous-feed, pre-colored metal coil. Leading manufacturers of metal products are using it with outstanding results in a wide variety of items. Enamelstrip's exclusive, flexible finish withstands the stresses of drawing, bending and forming without cracking or peeling. Many companies have entirely eliminated their finishing departments! Any metal in any finish will be coated and slit to your own specifications.

Write TODAY for detailed color bulletin

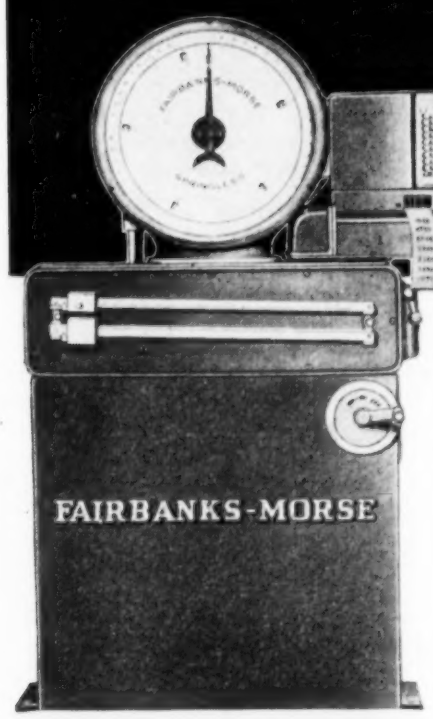
THE COATED COIL CORPORATION
511 West 30th Street, New York 1 • LOngacre 5-3161

If you write maker identify as IEN - 8796

record your weights

1938
4770
6848
2949
3384
7893
1070

Automatically!



Rule out the chance for weighing errors with a Fairbanks-Morse Dial Scale with Printomatic Recorder. Other pertinent information may also be printed with the weight for accounting or identification purposes . . . and there's an electronic control for materials handling and processing.

See your local Fairbanks-Morse Scale Specialist and save annoying, costly receiving and shipping disputes . . . or write Fairbanks, Morse & Co., Chicago 5, Illinois.

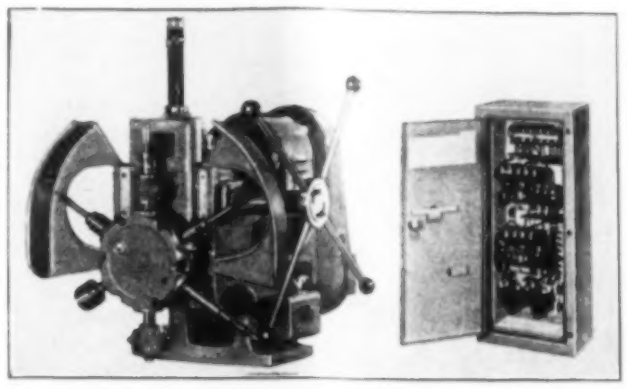
FAIRBANKS-MORSE
a name worth remembering when you want the best

SCALES • PUMPS • DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • RAIL CARS • HOME WATER SERVICE EQUIPMENT • FARM MACHINERY • MAGNETOS

If you write maker identify as IEN - 8798

DRILLING . . Turret type machine mounts six selective speed spindles

Source: BURG TOOL MFG. CO.
3741 Durango Ave., Los Angeles 34, Calif.



One second to index

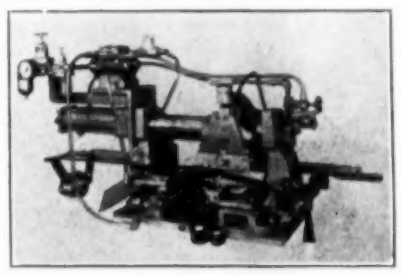
New assembly of the Burgmaster turret type drilling head is mounted on a flange base, measuring 12 by 15 inches. It is a self-contained motor driven assembly with a capstan wheel at the side for indexing and feed through an 8-in. maximum spindle travel. Two or more of the heads can be mounted to operate together in special assemblies. Speed range is 225 to 3,000 rpm.

Throat dimension measures 12 inches. Maximum clearance, from the nose of a No. 34B chuck to the bottom of the mounting flange, is 8¾ inches. Center of the spindle to the first mounting hole in the flange is 12¾ inches. Overall dimensions are about 40¾ by 15 by 32½ inches. The unit is known as Model 2B. It represents further development of Model 2A, previously described IEN-6623-52. Drive is by a 1 or 2 hp. motor and a Warner Electric clutch. The two speed motor and the clutch which provides an additional two speeds make up the four speed spindle adjustment. The electrical controls are assembled in a separate housing as shown in the illustration.

If you write maker identify as IEN - 8799

MARKING . . Air operated machine for circular plastic or metal work

Source: ACROMARK COMPANY
7 Morrell St., Elizabeth, N. J.



Tooled as specified

New assembly of the Series-9AA parts marking machine employs air pressure to feed the work and eject it at rates to 40 or more pieces per minute. It takes air at about 75 lb. from a shop line, is controlled by valves that are actuated by the marking head movements. The machine measures 30 by 14 by 21 inches. It mounts on a bench or pedestal.

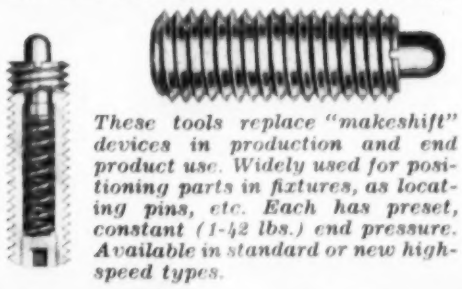
Applications include bottle caps, tool handles, molded plastic jars, tubular, cylindrical or round objects. The assembly includes an electric heating element and thermostat control for the marking die and a roll leaf or color transfer tape feed for use on plastic parts.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

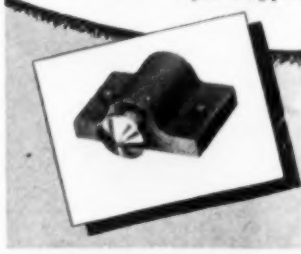
If you write maker identify as IEN - 8800

VLIER Spring Plungers & Stops

Save You Money in Hundreds of Ways



These tools replace "makeshift" devices in production and end product use. Widely used for positioning parts in fixtures, as locating pins, etc. Each has preset, constant (1-42 lbs.) end pressure. Available in standard or new high-speed types.



SPRING STOPS
Used where fixture design prevents mounting of spring plungers. Two sizes. 1½ and 32 lbs. end pressure.

Send for Catalog No. 56 giving full details.

VLIER ENGINEERING, INC.
4552 BEVERLY BLVD., LOS ANGELES 4, CALIF.
Distributors of Torque Thumb Screws, Toggle Pads, Fixture Keys

If you write maker identify as IEN - 8801

Fast Motor Service

Factory approved motor service in every industrial area from 97 Allis-Chalmers Certified Service Shops

ALLIS-CHALMERS CERTIFIED SERVICE SHOPS are independent service shops which meet rigid standards for ability, experience, equipment and business integrity. They use factory approved methods and parts and do your work promptly at a fair price.

Of course, Allis-Chalmers Certified Service Shops give good service on any electrical equipment, of any make. To find the Certified Service Shops in your area, call your nearby Allis-Chalmers District Office or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3867

ALLIS-CHALMERS

If you write maker identify as IEN - 8802

Less Fatigue More Production WITH **KELLER AIR TOOLS**

Less expenditure of physical effort means more energy available for intelligent workers to "use their heads." When they know you are providing the *best* air tools, workers are better satisfied—and you have improved labor relations.

Interchangeable parts
Weigh less
Consume less air
Reduce operator fatigue
Variety of handles, gearings, torques, speeds
Clutches, socket drivers, 45° and 90° attachments

Send for illustrated descriptive bulletin and detailed information

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 8803

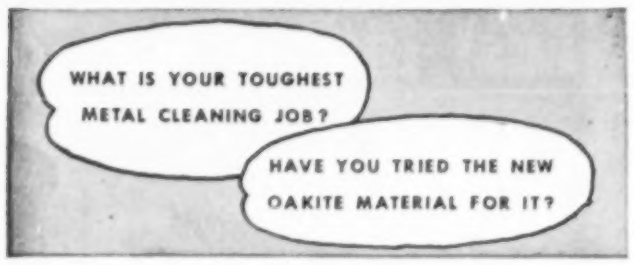
These *Bond* Casters are Your Best Buys for TROUBLE-FREE SERVICE

36-A Series—Double Ball Race Swivel Caster
1-A Series—Stationary Caster
41-A Series—Structural Steel Stationary Caster
40-AH-VG Series—V-Grooved Wheel Structural Steel Heavy Duty Swivel Caster
3-A Series—Single Ball Race Swivel Caster
Dual Wheel Swivel Caster

Ask your industrial distributor . . .
he knows that for dependability, economy and trouble-free materials handling you just can't beat Bond Casters. Your distributor has the right Bond Casters for your jobs. Get your copy of Bond Catalog K-38 from him, or write direct.

BOND FOUNDRY & MACHINE CO.
Manheim, Pennsylvania

If you write maker identify as IEN - 8804



In recent months, Oakite chemists have developed 16 new materials for performing such metal cleaning and processing operations as:

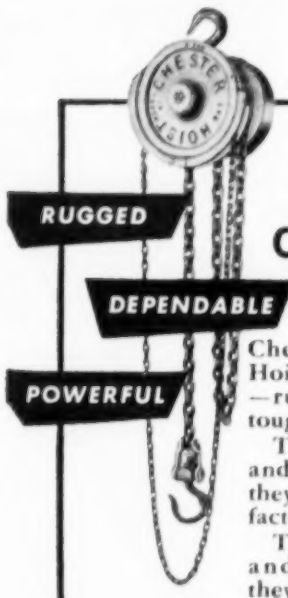
Heavy-duty cleaning in tanks
Washing in spray machines
Electrocleaning zinc-base die castings
Etch-cleaning aluminum
Stripping paint
Drawing and forming
One-operation cleaning, pickling and conditioning for painting
Applying zinc phosphate coatings to steel in preparation for painting

FREE Tell us which jobs interest you when you write for our revised 44-page booklet "*Some good things to know about Metal Cleaning*". Address Oakite Products, Inc., 16A Rector St., New York 6, N. Y.

Technical Service Representatives in Principal Cities of U. S. and Canada

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE

If you write maker identify as IEN - 8805



RUGGED
DEPENDABLE
POWERFUL

Spur-Geared CHESTER HOISTS

Chester Spur-Geared Chain Hoists are made for hard work—ruggedly built to do your tough lifting jobs efficiently.

They're safe for your men and equipment, too, because they're actually built to a safety factor of 5 times their rated load.

They operate more smoothly and wear longer, because they're Timken Tapered Bearing equipped.

Capacities, ¼ to 25 ton in standard Spur-Geared . . . quickly available, also, the Chester specials including Low Headroom, Extended Handwheel, and others. Ask your distributor . . . or write for complete catalog and tell us your requirements.

CHESTER HOIST DIVISION
The National Screw & Mfg. Company
Lisbon, Ohio

If you write maker identify as IEN - 8806

Proved Features—Improved Protection

- Fence fabric galvanized throughout
- Improved welded gates and locking devices
- Extra post and rail ties
- Heavy post caps and barb arms
- H-section line posts 15% heavier
- Engineered erection

CONTINENTAL STEEL CORPORATION
Kokomo, Indiana
Send me FREE copy of "Planned Protection"—complete manual on property protection.

Name
Address
City State

*TRADE MRK. REG. U.S. PAT. OFF.

CONTINENTAL STEEL CORPORATION

If you write maker identify as IEN - 8807

TESTING . . Electric meter to read current, resistance, voltage

Source: SIMPSON ELECTRIC CO.
5202 W. Kinzie St., Chicago 44, Ill.

List is $88

Model 269 is a new volt-ohm-microammeter with sensitivity of 100,000 ohms per volt. It provides 33 ranges for electronic and electrical applications on its 7-in. dial. Two controls set the range desired and adjust the resistance. Measuring accuracy is within 3 per cent on dc. and 5 per cent on ac. for full scale deflection.

Seven ranges read between 0 and 1.6 to 4,000 volts on dc. Five read between 0 and 3 to 800 volts ac. Four read 0 to 3 to 160 volts af. Volume level is between 8 and 45.5 decibels calibrated for use across a 600-ohm line. There are six ranges for resistance between 0 to 2,000 ohms and 0 to 200 megohms. There are five current ranges between 0 and 16 to 160 milliamperes and two between 0 to 1.6 and 16 amperes.

If you write maker identify as IEN - 8808

FEEDING . . Air controlled tank releases liquid at adjustable rate

Source: HANKINSON CORPORATION
184 Biltmore Bldg., Pittsburgh 16, Pa.

Drip or stream

Liquid feed for water treatment, acid feed for process operations, blending, can be controlled by adjusting an air inlet to this new Liquifeeder gravity equipment. It consists of a tank with a fill line, a gage equipped delivery line and an air inlet fitted with a bubble meter to indicate flow rate. Smallest liquid outlet is ¾ inch. The equipment is available in specified metals and in sizes from one quart up.

Entering air passes through the bubble meter. It can be seen and employed as an indication of delivery rate since the liquid that leaves the feeder will remain in proportion to it.

If you write maker identify as IEN - 8809

Electronic control, centered in a little pushbutton box on an operator's belt, enables him to govern starting, stopping, turning to right or left, at an electric tractor hauling a train of trailers. The operator can walk through a warehouse, picking up items named on an order list, and bring the train along to wherever he may be. Barrett-Cravens Company, 4609 S. Western Blvd., Chicago 9, Ill., is the maker. Radox is the trade name.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8810

BALLIZING

For NEW Speed and Economy in Hole Sizing and Finishing

BALLIZING is a precision high-production process for sizing and finishing die-cast, drawn, and machined holes — simply by pressing a ball through the unfinished hole. With alloy steel and tungsten carbide balls available in practical quantities and in any size required, this process is used with holes of all diameters.

MAJOR ADVANTAGES:

FAST; takes only seconds. ACCURATE. FINE FINISH — burnished smooth. ECONOMICAL. Uses unskilled labor. No tool sharpening. No close adjustments. No special equipment.

FREE BALLIZING BULLETIN gives details; shows typical applications. May we send you a copy?

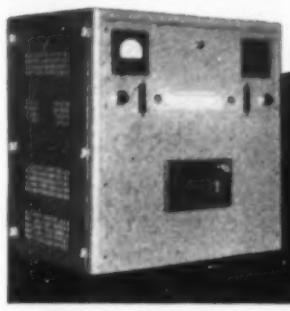
INDUSTRIAL TECTONICS, Inc. ANN ARBOR 2, MICH.

ITI PRECISION BALLS
All Materials — All Sizes
In Large or Small Quantities

If you write maker identify as IEN - 8811

what's your metal heating PROBLEM?

hardening?
brazing?
annealing?
soldering?



solve it with a
REEVELEC ELECTRONIC GENERATOR

Electronic heating equipment will sharply reduce production time and virtually eliminate rejects.

The unit shown here will anneal an auto clock spring in ¾ seconds; weld .020 nichrome wire in 1.5 seconds; silver braze two watch case lugs in 35 seconds.

Operated by unskilled labor, it has automatic time cycle control, automatic breakers in AC and high voltage circuits, current matching transformer and many other important features.

Occupies only 16" x 21" of bench space.

Cost is amazingly low . . . write now for complete details.

●

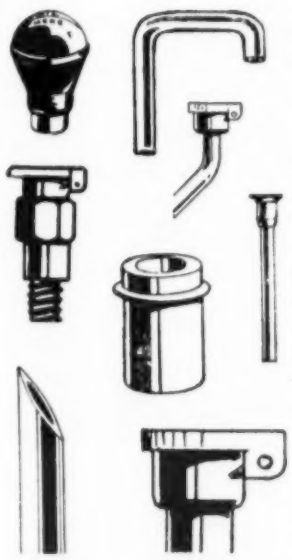
Reevelec Generators are available in all sizes up to 200KW. Extremely flexible, they can be adapted to many production processes by a simple tooling change. Our engineers will help you determine the model best suited to your needs.

REEVE ELECTRONICS INC.
613 W. LAKE ST.
CHICAGO 6, ILL.

If you write maker identify as IEN - 8812

EDCO

DO YOU USE *Oilers* OR FORMED TUBING?



Stocks of standard oilers and oil cups as listed in our new catalog are now carried at our factory in Detroit. Complete manufacturing facilities are available for your requirements for special oilers and lubricating devices.

Our facilities for both high volume and small quantity runs of special tube forms are at your disposal. We shall be pleased to quote, submit samples or aid in design of any oiling devices or special formed tube parts, the following being a few of the many parts we can make:

Spacers — Oil Lines
Bushings — Tube Assemblies
Vent Tubes — Orifice Tubes

Write for our new catalog today.

EYNON-DAKIN CO.
9906 Freeland Ave., Detroit 27, Mich.

If you write maker identify as IEN - 8813

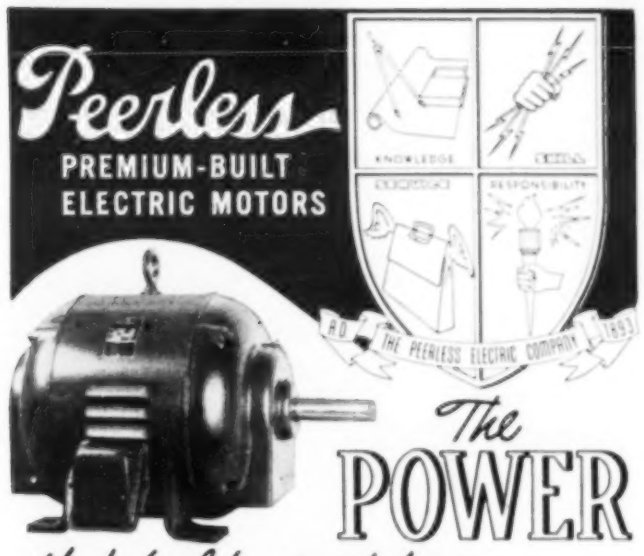
These Runways are available for Cranes of 5, 7½, and 10 ton capacities for 40', 48' and 60' clear span Brookville steel structures.

When ordered with building, crane columns and building columns are furnished as a welded assembly. Ordered later, field connections can be either bolted or welded.

Illustrated folder upon request

Brookville Manufacturing Co.
P.O. BOX 67 • BROOKVILLE, PA.

If you write maker identify as IEN - 8814



The POWER

that builds reputations

No greater compliment can be paid a motor than to call it Peerless. The men who build, sell and service America's finest mechanical equipment know what we mean.

"Service" by our representatives; "knowledge" of Peerless engineers; "skills" of its manufacturing personnel; and, "responsibility" of Peerless top management result in a motor with that extra something.

Yes, The Peerless Electric Company is proud to build motors with that extra something . . .

Something we call the Power That Builds Reputations.

THE PEERLESS ELECTRIC COMPANY

MOTORS
FANS
BLOWERS

Peerless Electric

1415
W. MARKET ST.
WARREN, OHIO

If you write maker identify as IEN - 8815

GRINNELL-SAUNDERS DIAPHRAGM VALVE

The operating principle of the Grinnell-Saunders Diaphragm Valve is simple. A rubber diaphragm, seating on metal, makes possible an absolute seal. At the same time, because working parts are wholly isolated, no packing glands are necessary, and stem leaks are impossible.

Successful on compressed air lines, it was only a matter of time before Grinnell-Saunders Diaphragm Valves were in demand for other type installations . . . handling materials as diversified as corrosive fluids, gases, beverages, foods, suspended solids . . . in lines where corrosion, abrasion, contamination, clogging, leakage and maintenance are costly factors.

Grinnell-Saunders Diaphragm Valves can be had with body, lining and diaphragm materials to meet different service conditions. Write for the Grinnell-Saunders Diaphragm Valve Catalog.

Quick Operating Valve

GRINNELL
WHENEVER PIPING IS INVOLVED

GRINNELL COMPANY, INC.
Executive Offices: Providence, Rhode Island
Sales Offices and Warehouses in Principal Cities

If you write maker identify as IEN - 8817

DISPENSING . . Motor driven machine moistens and delivers gummed tape

Source: NASHUA CORPORATION
Nashua St., Nashua, N. H.

Speeds packaging

The operator of this new Electric-88 Tayper sets a desired length of tape, between 6 and 70 in. on a dial. Then he depresses a foot switch. The tape is moistened and delivered ready to tear off and apply. Two stops, on the Tape Mizer dial at the side of the housing, can be set and secured for repeat action. Moistening fluid is held in a removable bottle on the left-hand side.

The machine handles rolls of paper, cloth, fibre reinforced tape 1 to 4 in. in width. The moistening water is electrically heated and thermostatically controlled. The machine operates on 110-volt ac. in standard design.

If you write maker identify as IEN - 8818

HOSE . . Wire reinforced for water suction or pressure service

Source: QUAKER RUBBER CORP.
Comly & Tacony Sts., Philadelphia 24, Pa.

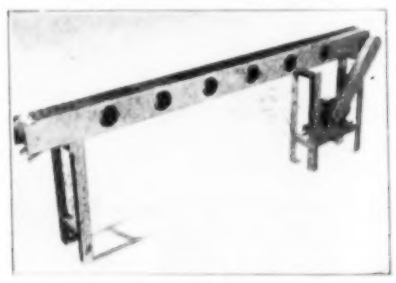
Light and flexible

Revolo is a new horizontal braided hose with two layers of braided rayon cord and a spring wire helix. The layers of reinforcement are separated by a layer of rubber to prevent chafing between the reinforcing cords and the wire. The wire can be grounded to carry static away. The hose takes standard water couplings. It is made in 1¼ and 3-in. inside diameter.

If you write maker identify as IEN - 8819

CONVEYING . . Motor driven chain 3½ or 4½ in. width, any length

Source: SAGE EQUIPMENT CO.
29-33 Essex St., Buffalo 13, N. Y.



Self-contained

Work pieces ride on the flat faces presented by the chain links in this new unit conveyor. It is available in hot rolled steel or stainless steel with various types of drive, speed and chain design to meet given requirements. The chain rides in a steel frame provided with access openings on the sides. The geared head motor mounts on a platform for chain connection at one end. The chain links are supported on channels over which they slide along the body of the conveyor. Construction includes a take-up to maintain correct tension.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8820

JEVIN® Jewelers type lathes for fine instrument work and second operations. Collets as small as .004". Send for catalog. Louis Levin & Son, Inc., 782 E. Pico Blvd., Los Angeles 21.

If you write maker identify as IEN - 8821

If your cost of reclaiming materials is too high Spencer Vacuum can probably give you the answer. It not only picks up the valuable metals or dusts but conveys them to a closed container at any point in the plant. Gold, babbitt, enamel dusts, solder, welding flux (see illustration) and foundry sand are reclaimed by the ton every day. The same Spencer unit will clean your floors and do a dozen other disagreeable and expensive jobs. Ask for Bulletin No. 144.

with SPENCER VACUUM

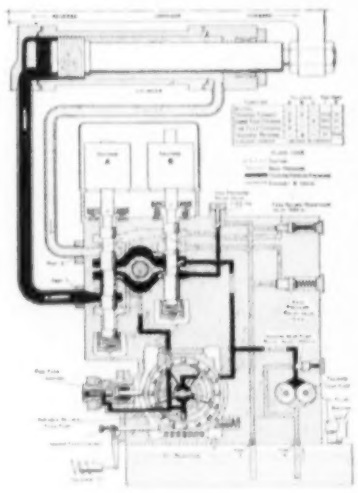
THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT

SPENCER HARTFORD

466-N

If you write maker identify as IEN - 8822

ANY-FEED Oilgear Power Unit

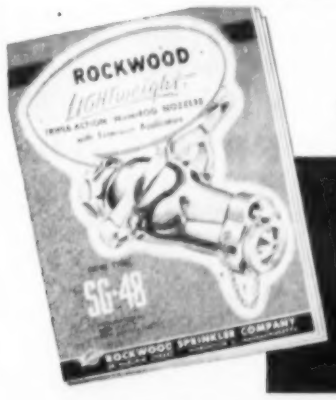


For machine tool and other straight-line feeds

An amazing little fluid power feed pump for practically any machine tool or straight-line feed installation you can think of. It embodies the *Any-Feed* Oilgear Fluid Power unit with a 20:1 range and rapid traverse as high as 265:1 over feed rate. It provides undeviating precision day in and day out once the feed rate is set.

It installs *into* your assembly easily, or mounts nearby or remotely. Yet control of the many possible functions is found in the electric pushbutton station; or partial or completely automatic operation is available. It affords complete operating safety for all action is instantly neutralized in case of accident. All parts are completely and easily accessible. The design is simple; you mount, connect two pipes and control wires. Write for descriptive Bulletin 44200 now while you think of it. THE OILGEAR COMPANY, 1567 West Pierce Street, Milwaukee 4, Wisconsin.

If you write maker identify as IEN - 8823



This booklet will help you

AVOID COSTLY FIRE LOSSES

Send for eye-opening facts on Rockwood's Triple-Action WaterFOG Nozzle

Here's a real all-purpose fire fighting nozzle. The Rockwood SG-48 can be quickly changed to a high velocity WaterFOG, straight water stream or low velocity WaterFOG pattern. Extinguishes fires in flammable liquids or ordinary combustibles faster, with less water and less damage. Protects firemen from hot fumes and gases and is easier to handle. Operates satisfactorily at 50 psi at the nozzle. For industrial and chemical plants, oil refineries, mercantile and public buildings, etc. Tested by Underwriters' Laboratories, Inc. and approved by Factory Mutual Laboratories.

Bulletin C-501R gives you complete data. Send for it today. Distributors in all principal cities.

ROCKWOOD

ROCKWOOD SPRINKLER COMPANY
Engineers Water . . . To Cut Fire Losses
40 HARLOW STREET, WORCESTER 5, MASS.

If you write maker identify as IEN - 8824

WHICH FOR YOUR MONEY?..

Ball Bearings that just "get by" or the best ball bearing "buy"

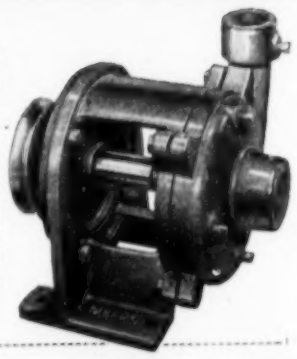
You can specify the shaft size, speed, load, service conditions, space and weight limitations and get the Fafnir Ball Bearing that meets those specifications *exactly*. Fafnir makes the most complete line in America.

Fafnir Radial Ball Bearings are available in extra light, light, and medium sizes — in various tolerances — single and double row designs — duplex arrangements — and with various types of seals and shields. The Fafnir Bearing Company, New Britain, Conn.

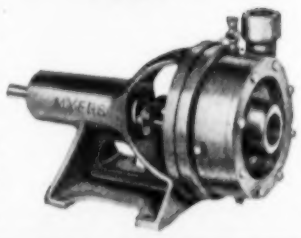
FAFNIR
BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

If you write maker identify as IEN - 8825

High Quality . . . Low Cost
MYERS CENTRIFUGAL PUMPS



New Centri-Thrift Line. ½, ¼, ¾ and 1 hp sizes, V-belt or motor-mounted. Ideal for air conditioning, hot and cold water circulation, booster service, laundry equipment, cooling systems, lawn sprinkling, liquid transfer. Myers quality features: replaceable bronze wearing ring; separate stainless steel pump shaft extended through open bracket for quick inspection and accessibility. Capacity to 50 gpm; heads to 92 feet. The Myers "economy" line.



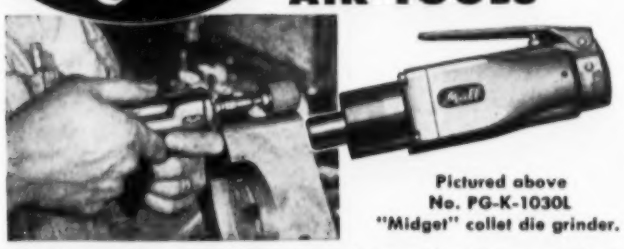
Myers Industrial Pumps. Motor-mounted, direct-connected or belt-driven. This line of Myers centrifugal pumps has these advantages: replaceable wearing rings, shafts fully protected against liquids and wear. High and low heads. 3500 and 1750 rpm. 10 to 650 gpm against heads up to 280 feet. Standard fitted, all bronze, or all iron.

TAKE OFF YOUR HAT TO THE MYERS

Write for catalog and prices
THE F. E. MYERS & BRO. CO.
247 Fourth St., Ashland, Ohio

If you write maker identify as IEN - 8826

You Get **POWER UNLIMITED** with featherweight **Mall PRECISION AIR TOOLS**



Pictured above
No. PG-K-1030L
"Midget" collet die grinder.

You're not limited to ampere ratings and voltages with air power. MALL pneumatic tools let you pour on the power shift after shift. Lightweight MALL air tools eliminate worker fatigue—boost production. Choose from among many styles and sizes of MALL.

POLISHERS • DISC SANDERS • ANGLE DRILLS • STRAIGHT DRILLS
NUT SETTERS • SCREWDRIVERS
IMPACT WRENCHES • GRINDERS

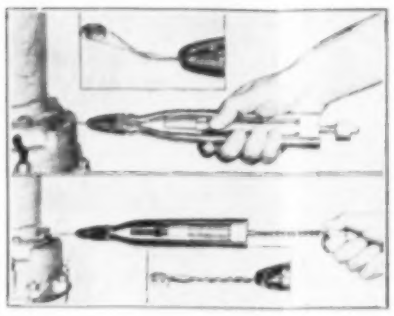
Get your free copy of the 1953 Mall Pneumatic Tool Catalog.

MALL TOOL COMPANY
7782 S. Chicago Ave., Chicago 19, Illinois
Send me the 1953 MALL Pneumatic Tool Catalog.
Name _____
Company _____
Address _____
MU-31

If you write maker identify as IEN - 8827

ASSEMBLING . . Plier type tool to place and twist safety wiring

Source: RALPH C. ROBINSON CO.
Box 494-A, Dept. PR, North Sacramento 15, Calif.



Time saver

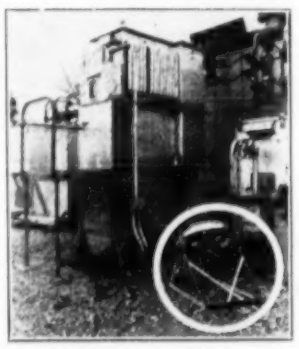
Safety wire, to prevent loss of fastenings in aircraft engines, carburetors, magnetos, electronic equipment, is placed and quickly twisted and cut to desired length by this new Wire Twister. The two ends of a wire are gripped in the jaws after the wire has been inserted through the hole in the fastening. A center rod is slipped down to lock the handles and a knob is pulled out. This latter operation causes the plier to spin and twist the wire into a tight assembly.

Two sizes are 9 and 12 in., the former for bench work on small equipment and the latter for use on an assembly line. The spiral rod to which the pull knob is attached operates in a bronze bearing. The plier head is heat treated. Exposed parts are corrosion proofed. List prices are $18.50 and $19.50.

If you write maker identify as IEN - 8828

VENTILATING . . Outdoor fan, trunnion mounted, to cool equipment

Source: ROBBINS & MYERS INC.
1343-47 Lagonda Ave., Springfield 99, Ohio



2,820 to 6,710 cfm.

Weather proof construction, corrosion proof finish, sealed prelubricated ball bearings and automatic reset thermal overload protector characterizes this new outdoor fan. It is designed to operate without attention, to keep equipment cool and for special applications. It is available with 16, 20, 24 and 30-in. aluminum Propellaire.

A grease filled cavity in the hub provides a moisture seal around the shaft. A neoprene flinger on the shaft keeps moisture out of the motor on vertical installations. The motor is available for 110/120-volt single-phase service or 220/440-volt three-phase service. In the latter case, the thermal protective device is omitted.

If you write maker identify as IEN - 8829

Rust Cutter is a penetrating oil made by James R. Kearney Corp., 3234-38 Clayton Ave., St. Louis 10, Mo. It penetrates through rust to free threaded fastenings. It was developed particularly for electric linesmen to loosen "frozen" fastenings on pole lines. The oil is available now in six-ounce aerosol spray cans using Du Pont Freon as the propellent. The linesman holds the can about six inches from the fastening, gives it a brief spray, waits about two minutes and then backs off the nut or bolt.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8830

DC *Continuous Duty* SOLENOIDS
6, 12, 24, 32 VOLTS • 10 LB. PULL OVER ½"

For operating throttles, chokes, fuel pump racks, anti-dieseling devices, or any application not requiring more than 10 lbs. pull over ½" stroke. Ruggedly constructed and entirely enclosed for dust and splash proof operation. It is furnished with a mounting bracket and threaded plunger for connecting to operating linkage.

Overall length, plunger out, 4½". Overall width of mounting ears 3⅞". Weight 2½ lbs. Special plungers can be supplied if required.

COMPACT • DUST PROOF • LIGHT WEIGHT

SYNCHRO-START PRODUCTS, INC.
Automatic Engine Control Equipment
8151 N. RIDGEWAY AVE. • SKOKIE, ILL.

If you write maker identify as IEN - 8831

New! Low-Cost! - Wide-Range!
VARIABLE Speed Sheaves
Easily Attached to Any Machine

1/15 TO 15 HP.
RATIOS UP TO 8:1

● Simple, sturdy Speed Selector Sheaves are applied to any machine in only a few minutes . . . giving you wide-range speed control at extremely low cost. You get wide speed variations with standard V-belts, since two variable pitch sheaves are used. Eliminates bulky sliding motor bases, movable jackshafts and wide, high-cost special V-belts.

• Standard V-belts • Automatic belt alignment
• Fixed shaft centers • LOW COST

Write FOR FREE BULLETIN
SPEED SELECTOR INC.
118-A Noble Court • Cleveland 13, Ohio

If you write maker identify as IEN - 8832

BURS
ROTARY FILES
MOUNTED POINTS

BURS MOUNTED POINTS

Small rotary cutters and grinding points with 3/32" shanks.

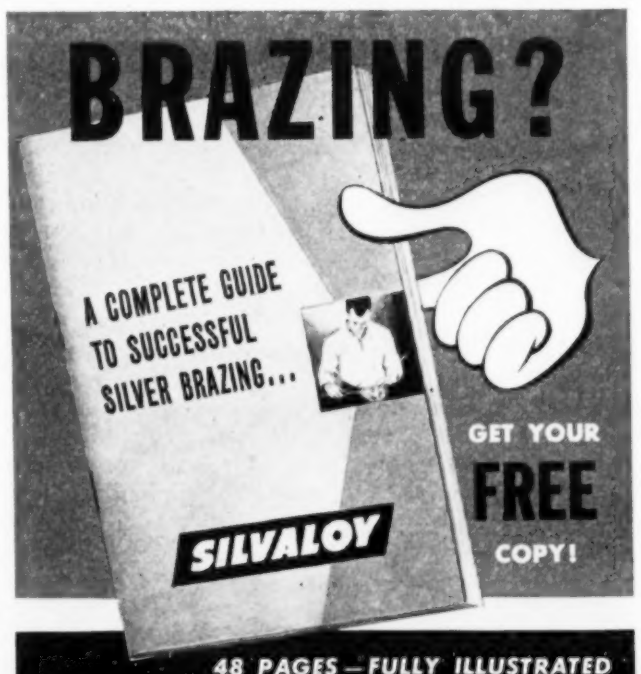
Wide variety of styles and sizes for tool and die making and similar production operations.

WRITE FOR CATALOG 10
for complete information and prices

PFINGST & COMPANY, Inc.
62 Cooper Square New York 3, N.Y.

If you write maker identify as IEN - 8833

BRAZING?



48 PAGES—FULLY ILLUSTRATED

Get this compact library of brazing data hat every design and production engineer—every brazing technician and buyer of brazing materials should have! It is the most complete guide available. Send for your free copy today.

THE AMERICAN PLATINUM WORKS
231 New Jersey Railroad Avenue • Newark 5, N.J.

If you write maker identify as IEN - 8834

Easy-low cost

RESOLITE SKYLIGHTING, and *NO MAINTENANCE!*

For skylighting new or old corrugated sheet buildings, just lap in sheets of translucent, corrugated RESOLITE — no framing, no flashing, no caulking!

And you can eliminate daytime lighting costs through Resolite's excellent interior diffusion of daylight.

Rugged Resolite is a Fiberglas-reinforced resin plastic; it's shatterproof, weatherproof and inert to ordinary acid or alkali industrial fumes.

Investigate Resolte for skylighting your industrial buildings — TODAY! For complete information and name of your nearest distributor, write:

RESOLITE CORP., Rt. 19, Zelienople, Pa.

If you write maker identify as IEN - 8835

5 B&W INTEGRAL-FURNACE BOILERS, TYPE FM

Cut-away view of typical B&W Integral-Furnace Boiler, Type FM, available in standard sizes for loads of 2900 to 28,000 lb per hr at steam pressures to 235 psi . . . also available for higher pressures.

HELP MINE SULPHUR in Louisiana Marshland

With the report that molten sulphur had begun to flow at its new plant in the Louisiana marshland, The Freeport Sulphur Company announced the success of its unique sulphur mining development, climaxing eight years of intensive research. The only "amphibious plant" of its kind in the world, it is expected to produce about 100,000 tons of critically needed sulphur a year when in full production.

Playing a major role in the unusual operations are five B&W Integral-Furnace Boilers, Type FM. Each of the boilers can provide up to 30,000 lb steam per hr for turbine-driven blowers, turbine-electric generators, and to heat sea-water for the sulphur mining operation. The water is preheated by direct contact with the boiler flue gas passing through heat exchangers.

As part of a "plant" including shops, warehouses and offices, and described as the "strangest craft since Noah's Ark", these B&W boiler units sit atop a 200-foot, specially-constructed steel barge towed to and resting on an oyster shell base laid on the bottom of Bay Ste. Elaine. They were chosen to assure efficient, economical performance under particularly arduous service conditions . . . are surrounded by a salt-water marsh and almost completely exposed to salt-water spray and other destructive actions of weather and climate.

Whether for sulphur mining or oil refining, for heat, process, or power requirements, versatile B&W Integral-Furnace Boilers, Type FM, are now in service or on order for more than 50 different industries and other users, with a total steam capacity exceeding 6½ million lb per hr. The Babcock & Wilcox Co., Boiler Div., 161 E. 42 St., New York 17, N. Y.

COST-SAVING FEATURES of the B&W Integral-Furnace Boiler, Type FM

- Saves Erection Time and Cost
- Meets Wide Range of Service
- Handles Quick Load Changes
- Fast Steaming
- Low Maintenance
- Easy Accessibility
- Suitable for Outdoor Service
- Burns Oil and/or Gas
- Saves Fuel
- Saves Space
- Safe, Automatic Operation

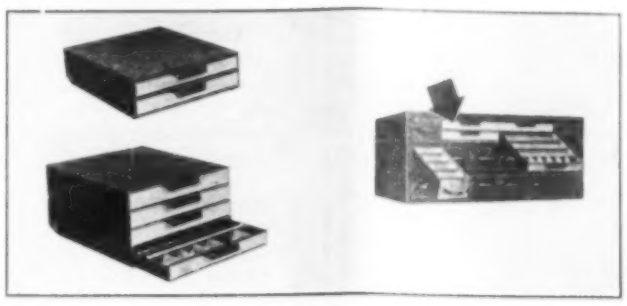
BABCOCK & WILCOX BOILER DIVISION

G-587

If you write maker identify as IEN - 8837

STORING . . Tiny parts cabinet replaces drawers in a larger cabinet

Source: PRECISION EQUIPMENT CO.
3712-16 Milwaukee Ave., Chicago 41, Ill.



For the very small pieces

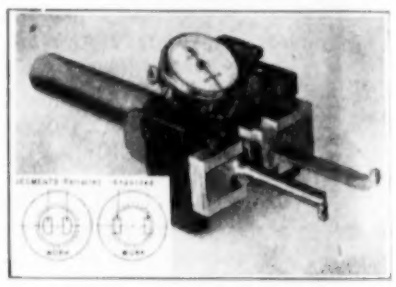
Little Gem is a new two-drawer steel cabinet designed to hold very small parts. It can be fitted in place of two of the drawers in the company's Standard parts cabinet. The two-drawer unit is shown to the upper left in the illustration. A four drawer combination is shown below it. To the right, two of the units are fitted in place of four Standard drawers in the top center on the 18-drawer assembly.

Each two-drawer assembly, for the tiny parts, measures 11 by 11 by 3¼ inches. It is equipped with eight dividers per drawer to make 24 compartments. Extra dividers can be added to make 56 compartments. The standard cabinet measures 34 by 12 by 13¾ inches. It holds 18 drawers measuring 5⅜ by 11⅞ by 3⅛ inches. This unit lists at about $30. A Little Gem two-drawer unit can be substituted for two of the regular drawers for an additional $4.60.

If you write maker identify as IEN - 8838

GAGE . . Dial indicator unit for groove diameter and roundness

Source: BRYANT CHUCKING GRINDER CO.
255-59 Clinton St., Springfield, Vt.



For product inspection

Groove gage, Type P-11, is a new portable dial indicator instrument to check diameter and roundness of internal grooves. It covers a range of diameters to 5 in. and will check grooves located 1 to 2 in. from a work face, depending on the groove diameter. Actual checking is by a pair of segments mounted on platforms, one of which is movable.

A thumb lever collapses the movable spring loaded segment so the gaging fingers can enter the work. Release of the lever permits the segment caps to expand into the groove and actuate the dial indicator. It reads variation from a predetermined size. Roundness is indicated by rotating the work piece on the segments or the gage in the work.

Four pairs of grooved segments will cover standard O-ring grooves from 7/16 to 4⅞ in. in diameter. Four different pairs of segments cover standard snap ring grooves from ¼ to 5¼ inches. One pair of segments can be adjusted over a 2 in. range for application in non-standard grooves.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8839

Stop CORROSION in your Steam System WITH CORAVOL

When fed to your steam system, **CORAVOL:** (1) *prevents* corrosion in steam and condensate lines, (2) *cleans out* clogging rust deposits resulting from previous corrosion. Thus, **CORAVOL** protects lines, increases the effectiveness of heat transfer surfaces, restores original capacity of lines and the operating efficiency of valves and traps.

CORAVOL is part of a complete technical service which provides special chemical formulas for: Boiler Feed Water . . . Foam Prevention . . . Hot Water Supply . . . Refrigerating Brine . . . Cooling and Condenser Water . . . Rapid Scale Removal . . . Coagulation . . . Algae Control.

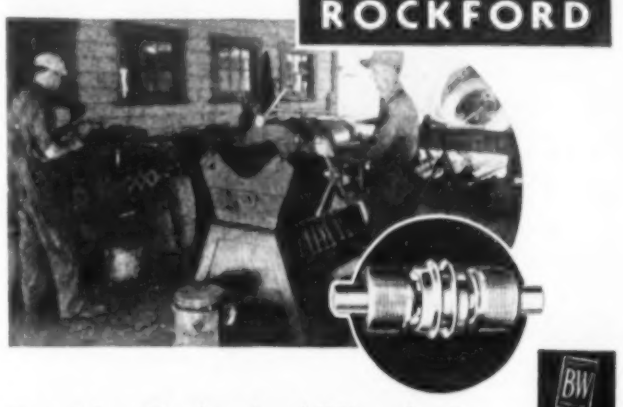
Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Missouri—for complete FREE data about the **CORAVOL** process.

Western Chemical Co. is owner of U. S. Patent No. 2053024 covering the use of volatile amines in steam systems.

WESTERN CHEMICAL CO.
715 WASHINGTON KANSAS CITY, MO.

If you write maker identify as IEN - 8840

CLUTCHES by ROCKFORD



Provides Mechanized "Muscles" for Pipe Threading Jobs

Much of the manual labor has been taken out of pipe threading by the Toledo Pipe Threading machine shown above. And ROCKFORD Pullmore CLUTCHES help it handle this operation much faster and better than previous cutters. Let ROCKFORD help modernize the power transmission control design for your next model.

B-W ENGINEERING MAKES IT WORK
B-W PRODUCTION MAKES IT AVAILABLE
ENGINEERING BULLETIN SENT ON REQUEST

ROCKFORD CLUTCH DIVISION BORG-WARNER
303 Catherine Street, Rockford, Illinois, U. S. A.

If you write maker identify as IEN - 8841

FASTER FINISHING at less cost!

CP Hicycle Portable Electric Tools for grinding, sanding, buffing and polishing not only finish products faster — but at far less cost!

Lightweight CP Hicycle tools operate under constant speed — there's no sag under full load. Hicycle induction motor and rugged design assure low-cost power and long service life with minimum maintenance . . . has a solid rotor, no armature to burn out . . . no commutator or brushes to replace. Write for details. Chicago Pneumatic Tool Company, 8 East 44th Street, New York 17, N. Y.

Chicago Pneumatic

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as IEN - 8842

Best Buy in Hoists!

. . . and here's why!

1. Low operating cost.
2. Safe! The *only* hoist with self-locking, double worm gear which acts as its own load brake.
3. Steel from hook to hook—heavy, positive acting limit switches.
4. Dual voltage motors quickly convert from 220 to 440 volts or vice-versa.
5. Just hang it up, plug in, pull cord (one-hand control) and it goes to work.
6. Assured performance, backed by the exclusive Whiting Warranty Plan.
7. Most standard models shipped from stock.

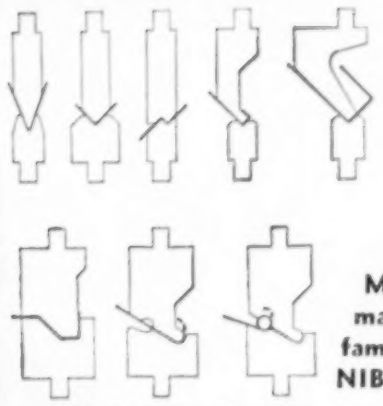
WHITING ELECTRIC CHAIN HOISTS

Send for Illustrated Bulletin H-112

WHITING CORPORATION
15629 Lathrop Avenue, Harvey, Ill.

If you write maker identify as IEN - 8843

BRAKE DIES



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Made by the makers of the famous SEMCO NIBBLER PRESS

- MANY STILL IN USE EVEN AFTER 10, 20 AND EVEN 30 YEARS.
- THEY COST MORE BUT THEY LAST FOR YEARS.

Write for estimates on your work and ask for latest literature.

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SERVICE MACHINE COMPANY INCORPORATED

200 MILLER STREET ELIZABETH, N. J.

If you write maker identify as IEN - 8844

COSMOLUBE

HOUGHTON

MULTI-PURPOSE GREASE

Lasts Longer!

- High melting point
- Pumps at 20° *below zero*
- Insoluble in water
- Adheres securely to metal
- Resists oxidation
- Stores without separating

GET THE LATEST BULLETIN on this heavy-duty grease widely used throughout industry in cold, hot and wet locations. Address E. F. Houghton & Co., 303 W. Lehigh Avenue, Philadelphia 33, Pa.

COSMOLUBE . . . a product of E. F. HOUGHTON & CO. PHILADELPHIA · CHICAGO · DETROIT · SAN FRANCISCO

Ready to give you on-the-job service . . .

If you write maker identify as IEN - 8845

Industrial CRANES Improve Your Profit

Pillar Cranes
Up to 6 Tons
Boom Swings
360 Degrees

Handle Material to and from Open Cars, Trucks and Machines at *Lower Cost*

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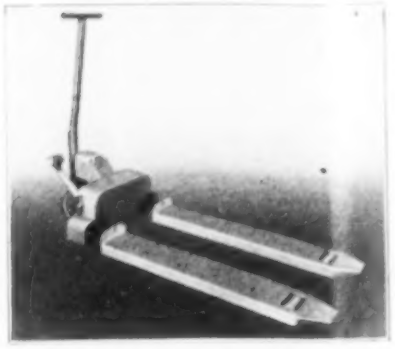
INDUSTRIAL CRANE & HOIST CORPORATION
(formerly Industrial Equipment Co.)
321 NORTH ADA STREET CHICAGO 7, ILLINOIS
Overhead Cranes • Jib Cranes • Monorail Systems
Crane Runways
Representatives in Principal Cities

If you write maker identify as IEN - 8846

TRUCK . . Foot hydraulic lift, interchangeable forks for pallets

Source: RACK HYDRAULIC EQUIPMENT CORP. 6th St. & Leisenring Ave., Connellsville, Pa.



One year guarantee

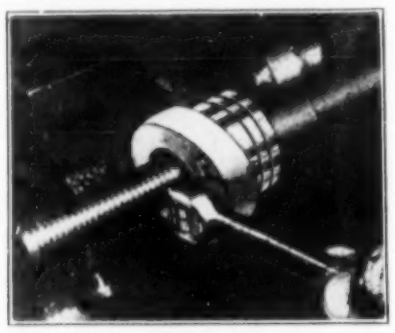
Turnabout Ajust-A-Fork is a new foot operated lift truck for pallets. It is characterized by its provision for interchange of the load forks. Five standard fork lengths are 30 to 60 inches. The truck and the forks can be purchased individually. An adjustment on the truck frame also permits setting the width at 25 or 27 inches. Load rating is 2,500 pounds. Weight is 299 pounds.

Steering is through a 270 deg. arc on the roller bearing resinoid-type 8 by 2-in. front wheels. The rear wheels are made of aluminum. They are 3¼ in. in diameter by 4¼ in. in face width and are mounted on ball bearings. The handle locks with the floor when it is down in horizontal position. Prices start at $350.

If you write maker identify as IEN - 8847

WRENCH . . Socket type ratchet reaches nut over extended rod or stud

Source: TUBING APPLIANCE CO. 10319-23 Anza Ave., Dept. 18, Los Angeles 45, Calif.



Clears obstructions

Life Saver is a new socket type ratchet wrench, companion unit to the company's open type ratchet previously described IEN-2707-53. The new wrench will reach over an extended stud or projection, such as the insulator on a spark plug, to span and turn the nut.

It will ratchet satisfactorily in a 7-deg. arc for use in close quarters. It is equipped with a square drive handle but the head also will take a regular torque handle. Four sets are available with snap-in sockets for hexagon nut sizes from ⅜ to 2⅛ inches.

If you write maker identify as IEN - 8848

Bright image, 11 ft. in width, can be projected on a wall, billboard, screen, by a 3¼ by 4-in. slide and a new wide angle projector. The equipment is fitted with a slide changer that fades out a picture, changes the slide and suddenly lights the new one every seven seconds. Six slides are standard. Twelve or eighteen can be specified. Light source is a 3,000-watt lamp. Genarco Incorporated, 97-06 Sutphin Blvd., Jamaica 4, N. Y., is the manufacturer under patent 2576436.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8849

If you write maker identify as IEN - 8850

Save! with CARBON-GRAPHITE MATERIALS *and* COMPONENTS

Write for Booklet 40A for details on Stackpole carbon-graphite specialties to solve friction, temperature, corrosion, lubricating and arcing problems. Letterhead request, please!

- ✓ GROUND RODS
- ✓ VOLTAGE REGULATOR DISCS
- ✓ BEARINGS
- ✓ DASH POT PLUNGERS
- ✓ RESISTANCE WELDING AND BRAZING TIPS
- ✓ GLASS MOLDS
- ✓ NON-WELDING CONTACTS
- ✓ FRICTION SEGMENTS
- ✓ CLUTCH RINGS
- ✓ BRAZING BOATS
- ✓ MOLDS AND DIES
- ✓ CONTINUOUS CASTING DIES

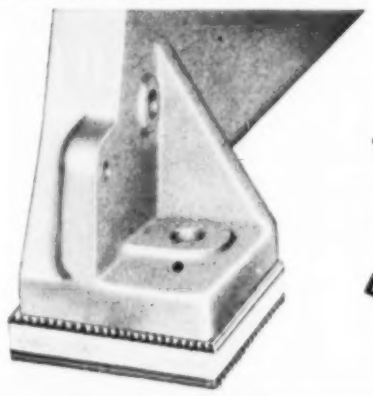
STACKPOLE

STACKPOLE CARBON COMPANY • *St. Marys, Pa.*

EVERYTHING IN CARBON BUT DIAMONDS

If you write maker identify as IEN - 8851

It's SIMPLE To Control VIBRATION and NOISE with Elasto-Rib...



NO BOLTING

NO CEMENTING

LOW COST

Elasto-Rib effectively stops transmission of vibration and noise by utilizing the elastic and damping properties of both cork and rubber.

It is fast and easy to install. For most machine applications, no bolts, lag screws or cement are required. Sheets 24" x 36" can be sawed or cut to size as needed.

New, illustrated booklet tells all about Elasto-Rib and how to install it. Ask for ER-701 and free sample.

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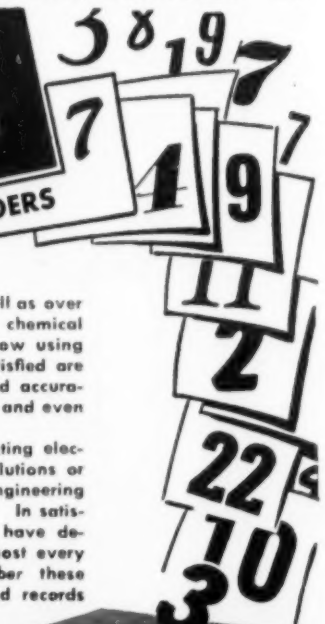
KORFUND VIBRATION CONTROL — SPRINGS — RUBBER — CORK

48-35 E. Thirty Second Place, Long Island City 1, N. Y.
In Canada: 510 Canal Bank, Ville St. Pierre, Montreal

If you write maker identify as IEN - 8852

RECORDING COUNTERS

REPEAT ORDERS



19 of the largest universities as well as over 40 leading companies in the steel, chemical petroleum and other industries are now using Ametron Recording counters. So satisfied are these purchasers with the speed and accuracies that they have repeated for 5,10 and even 30 counters.

Whether you are interested in counting electrical impulses, time intervals, revolutions or whatever your problem is, our engineering department can work it out for you. In satisfying this variety of industries we have developed a recording counter for almost every type of application. And *remember* these counters give you immediate printed records as they count.

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If you write maker identify as IEN - 8853

Belt Saver Pulleys

SINCE 1866

. . . Protect Expensive Belts

For rough service installations . . . for the handling of hard, abrasive materials—always specify the S-W 'BELT-SAVER'.

Its special wing and cone design and its self-cleaning action assure longer belt-life and reduced maintenance costs.

The 'BELT-SAVER' pulley is exclusive with Sprout-Waldron, along with a complete line of standard and special cast iron pulleys.

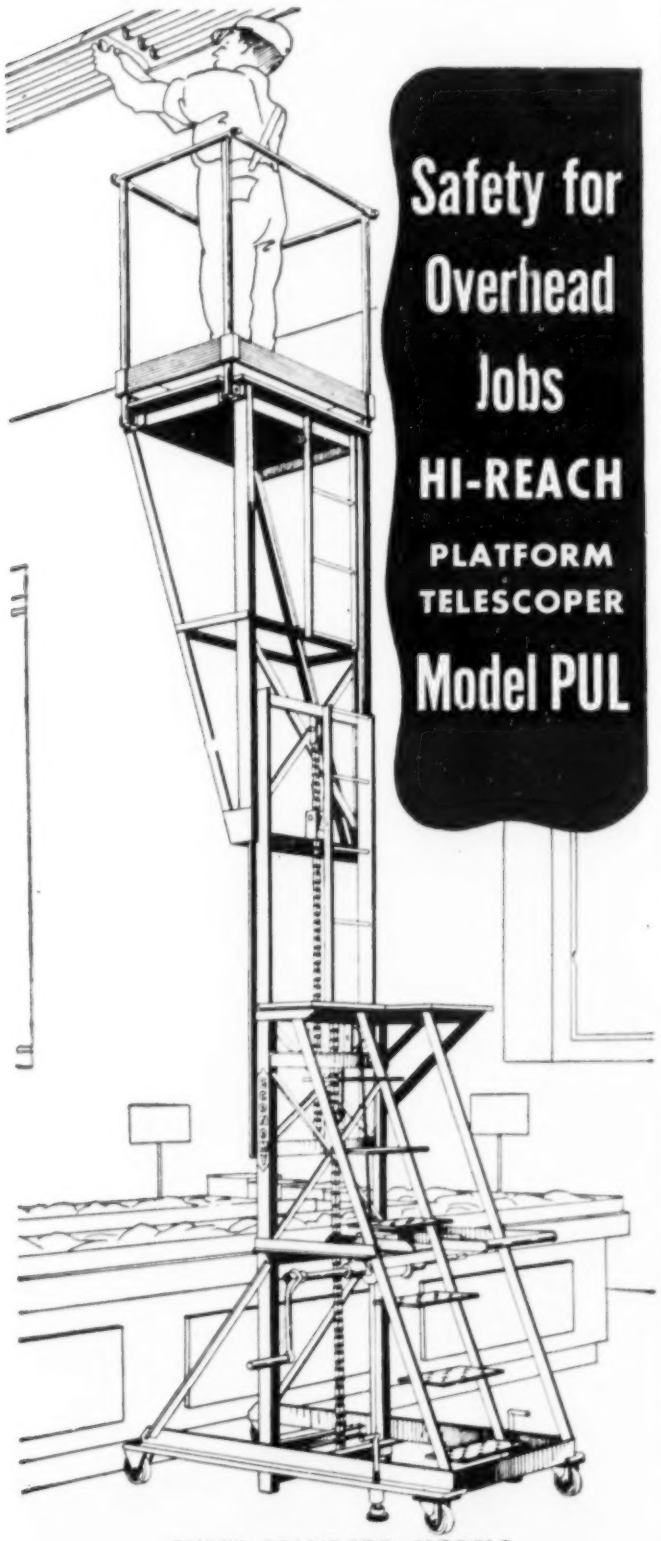
Write for Bulletin 35-A today! Sprout-Waldron & Co., 5 Logan St., Muncy, Pa.

Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

198

SPROUT-WALDRON

If you write maker identify as IEN - 8854



Safety for Overhead Jobs

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Model PUL

THREE STANDARD MODELS

No. 1—Platform lift 10'9"	**$305.00**
No. 2—Platform lift 11'9"	**315.00**
No. 3—Platform lift 15'0"	**340.00**

Equipped with 5" diameter base wheels
Rubber-tired wheels $8.00 extra
F.O.B. Chicago
Other models with platform lift up to 95'
Write for complete specifications.

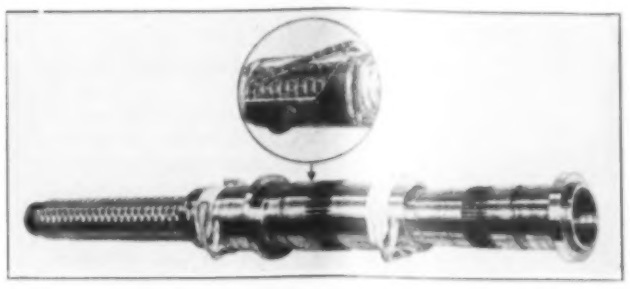
ECONOMY ENGINEERING COMPANY

4502 West Lake Street • Chicago 24, Illinois

If you write maker identify as IEN - 8856

JACK . . Screw and nut ride on steel balls in closed circuit

Source: VARD INC.
2979-83 E. Colorado, Pasadena 8, Calif.



Design and application data on request

Rotation is converted to linear movement by this new ball bearing assembly of screw and nut. Friction is virtually eliminated. Matching threads in the two members form the inner and outer races for the balls. The closed circuit is completed through a tube in the nut to connect the two ends. Standard screw sizes are ⅜ to 4 in. in diameter. Length is to 22 feet.

If you write maker identify as IEN - 8857

HARD FACING . . Welding electrode for equipment parts subject to wear

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

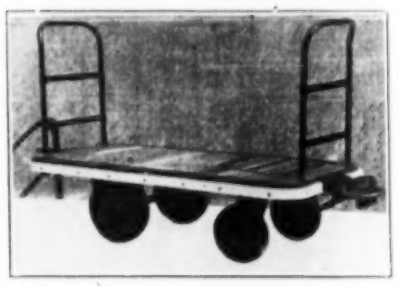
Brown end and white spot

Type W-98 is a coated flame hardening electrode that can be used in all positions for build-up work and hard surfacing applications. It is particularly suited where the deposited metal requires machining or subsequent flame hardening. Typical applications include road machinery parts, gears, pinion teeth, pump housings, shafts, sprockets, hawse pipes. Hardness is approximately 250 Brinell as welded and about 350 Brinell after flame hardening. Sizes are ¼ to ¼ inch.

If you write maker identify as IEN - 8858

TRUCK . . Hand platform trailer rates 1 ton, rides on pneumatic tires

Source: MERCURY MFG. CO.
4132 S. Halsted St., Chicago 9, Ill.



Flush hardwood deck

The combination of pneumatic tires on the load wheels and casters and a white rubber bumper surrounding the platform makes this new truck a silent unit and one that will not mar walls and doorways. Its platform measures 3 by 6 ft. and stands 18½ in. in height. Rack sockets are included in the sides and ends. Couplers are standard at both ends. The truck can be used as a single unit or in trains back of a tractor.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8859

AMERICAN makes good STOCK gears

...conveniently available to you through good distributors

You'll find American STOCK Gears meet every requirement for high quality, accurate tooth contour, smooth, quiet performance and long life.

Complete line includes:

Spur Gears . . . Racks . . . Change Gears . . . Internal Gears . . . Miter Gears . . . Bevel Gears . . . Ratchets and Pawls . . . Spiral Gears . . . Worms and Worm Wheels.

Write us for name of distributor nearest you . . . Also request a free copy of Specification Catalog.

asg AMERICAN STOCK GEAR division
PERFECTION GEAR COMPANY • HARVEY, ILLINOIS

If you write maker identify as IEN - 8860

For Longer Life . . . Less Cost, Get,

JOB-ENGINEERED

ILLINOIS GLOVES

Checked in the laboratory with stop-watch precision for maximum resistance to acids, heat, abrasives, there's an Illinois Glove for your roughest job! Our engineers will design special gloves to meet your most rigid specifications! Write today for catalog and information!

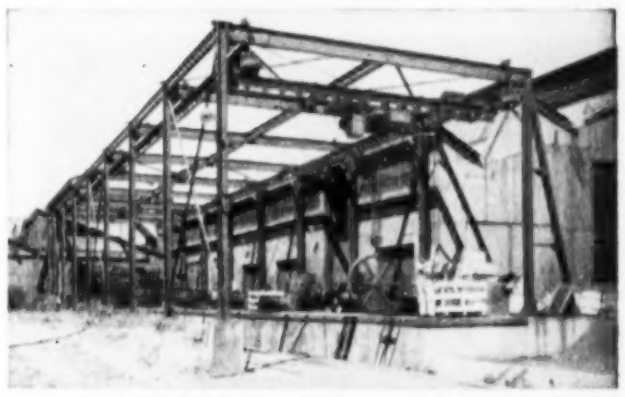
RECONDITIONING MEANS SAVINGS! Illinois Gloves are made strong, take reconditioning easily, come through stronger, good as new! Write about our own reconditioning process!

ILLINOIS GLOVES

Sales Office: 1401 Fairfax Trafficway Bldg. D, Kansas City, Kansas

ILLINOIS GLOVE CO. CHAMPAIGN, PANA, EFFINGHAM

If you write maker identify as IEN - 8861



5 TON TRANSFER BRIDGE UNLOADS CARS AND TRUCKS . . . *Delivers Directly to Inside Building Without Rehandling*

This push-button-operated motor-driven bridge lifts loads up to 5 tons from trucks or railroad cars at any point along the loading dock. The bridge interlocks with the overhead rail at door enabling delivery of materials to and from points inside of building directly without rehandling. Speeds handling! Saves time! Cuts costs!

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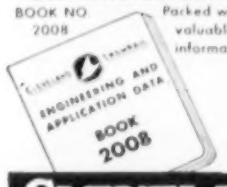
BOOK NO. 2008 — Packed with valuable information



CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4226 East 285th St., Wickliffe, Ohio

CLEVELAND TRAMRAIL

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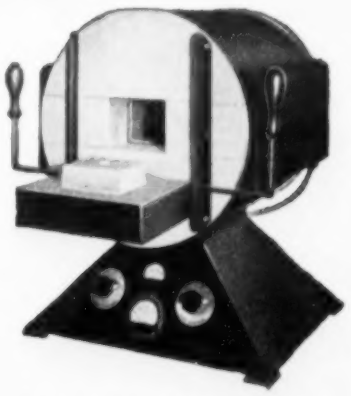
HEVI DUTY ELECTRIC COMPANY

FOR TEMPERATURES FROM 1700° F. TO 2600° F.

Use The

HEVI DUTY G-05-PT FURNACE



Inside Diameter
4⅛" W. x 7" L. x 2¾" H.
3500 WATTS
Write for Bulletin LAB-250A

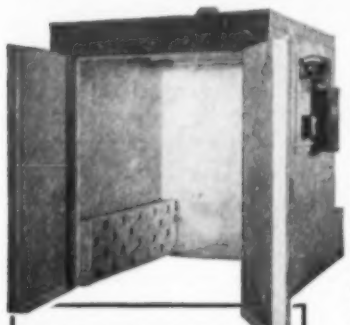
- ☆ Less Heat Loss — Improved Insulation and No Rheostats
- ☆ Better Control — Through a 48 Step Tap Changing Transformer
- ☆ Easily Replaceable Silicon Carbide Type Heating Elements
- ☆ Indicating Pyrometer and Tap Switches Mounted in Sliding Drawer

HEVI DUTY ELECTRIC COMPANY
HEAT TREATING FURNACES HEVI-DUTY ELECTRIC EXCLUSIVELY
DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS
MILWAUKEE 1, WISCONSIN

If you write maker identify as IEN - 8863

"Any Way You Figure"

Up to 50% Faster Baking



Despatch OVENS

There's a Despatch Finish Baking Oven to meet the needs of both large factories and small shops. Wide range of uses includes aging, preheating, drying and curing. Ideal for baking insulating varnish on armatures . . . film surfaces of lacquer and enamel . . . wrinkle finishes on metal parts . . . hundreds of other baking operations. 12 to 240 cu. ft. capacities.

- Fast finish baking of mass production parts, or for repair service . . .
- Vertical and horizontal forced air circulation prevents over or under baking . . .
- Gas or electric operated . . . wide range of sizes . . . factory tested . . . shipped assembled . . ready for operation.

Write for Bulletins on RS Ovens and Trucks

Manufacturers of ovens . . . for paint finishing . . . dehydrating curing . . . all industrial and laboratory applications.

DESPATCH OVEN CO. Established in 1902

337 DESPATCH BUILDING
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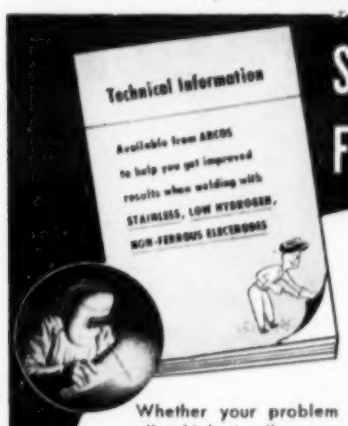
If you write maker identify as IEN - 8864

Send for this FREE BOOKLET



A Directory of Technical Data Available From Arcos To Help You On Your Welding Jobs

Whether your problem involves welding stainless, low alloy-high tensile, or non-ferrous metals, this handy Directory will tell you quickly the wealth of practical information available from Arcos for your use. Right at your fingertips it places a convenient recap on what Arcos offers, such as: **Application Chart and Weld Metal Analysis on 56 Different Arcos Electrodes; Stainless Electrode Selector For Welding Stainless Steels; ABC's of Welding High Tensile Steels; plus informative charts, electrode data sheets, reprinted articles on welding, technical guides, etc.**

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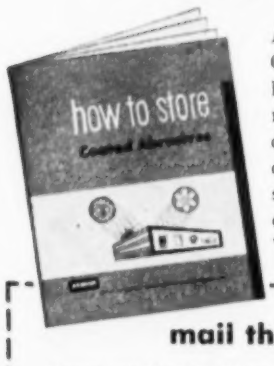
1500 South 50th Street • Philadelphia 43, Pa.

If you write maker identify as IEN - 8865

Stop wasting money!

Protect your investment in coated abrasives



A new booklet from Armour's Coated Abrasives Division tells you how to stop losses—in time and money—from improperly stored coated abrasives. Clogging, filling, cracking, loss of grains—these are some of the things proper storage can prevent. Send for free copy of "How to Store Coated Abrasives."

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Please send booklet "How to Store Coated Abrasives."

Name _____
Company _____
Address _____
City _____ Zone ____ State _____

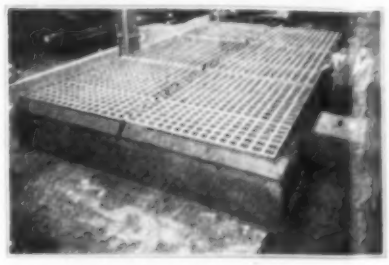
ARMOUR *Coated Abrasives*

Armour and Company • North Benton Road • Alliance, Ohio

If you write maker identify as IEN - 8866

FOUNDRIES . . Shakeout table assembles units rating to 25 ton each

Source: ALLIS-CHALMERS MFG. CO.
909 S. 70th St., Milwaukee 14, Wis.



Single units, 1 to 25 ton

Illustrated is a six unit assembly of 25 ton individual shakeout tables to provide a complete new Foundromatic shakeout rating 150 ton. Overall dimensions are 16 by 30 feet. The multiple assembly is made with serrated edges between sections to prevent gaggers and rods from falling through to the conveyor beneath while the shakeout is in operation.

Improved design includes simplified two bearing construction, cushioned laboratory action and a pivoted motor base to maintain V-belt tension while the shakeout is in action. Steel coil springs provide about 92 per cent of the vibration absorption to support the shakeout body mechanism and deck. As the load compresses the springs, the pivoted motor base maintains center distance to hold correct V-belt tension in the Texrope drive.

If you write maker identify as IEN - 8867

COMMUNICATING . . Portable radio for two-way talk in a plant area

Source: INDUSTRIAL RADIO CORP.
426-30 N. Parkside Ave., Chicago 44, Ill.

About 20 pounds

Pak-Fone is a new portable combination of 8-tube transmitter and 15-tube receiver with self-contained battery operation. The equipment conforms with FCC licensing regulations and is designed to provide two-way radio telephone communication between other stations portable, mobile or fixed. Optional power supplies permit the equipment to be used as a mobile station with a 6-volt automobile battery or as a fixed station on 110-volt ac.

Standard equipment employs batteries. Operation is on 25 to 50 mc. or 152 to 174 mc. bands. The filaments of several tubes shut off automatically when the equipment is on "standby" to conserve the batteries. An incoming signal switches the tubes back into operation. An indicator light shows the battery condition.

If you write maker identify as IEN - 8868

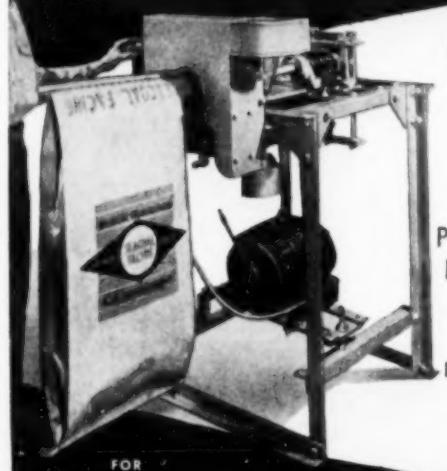
Eighteen blades, of various types, are available with the RCS reciprocating head sawing attachment for a portable electric drill. Included are designs to cut asphalt materials, metals, wall tile, shingles, siding, in straight, circular, contour outline. RCS Tool Sales Corp., 23-27 N. Ottawa St., Joliet, Ill., has assembled one each of the eighteen units on a card so you can purchase for test purposes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8869

Investigate the 1953 BLACK DIAMOND AUTOMATIC

valve bag packer



Designed to pack dry granular or powdered free-flowing materials
★
Push-button control
Moderately priced
Easy to install
Lowest maintenance costs
Performance guaranteed
★

FOR FURTHER INFORMATION WRITE TO **BLACK PRODUCTS COMPANY**
13513 S. CALUMET AVE. • CHICAGO 27, ILL.

MANUFACTURERS SINCE 1912

If you write maker identify as IEN - 8870

SINGLE-ACTING *Air-Clamp*

	STROKES	
Bore	Horizontal	Vertical
1"	½"	1"-2"
2¼"	1"-2"-3"	½"
3"		½"-2"
4"	2"-2½"	3"
5"	3"	3"
6"	3"	2"

**Pneumatic Cylinders*

NEW CATALOG READY! Complete line of simple, adaptable, compact spring-return air cylinders. Cut costs and speed up production the modern, Air Power way. Write today.

MEAD SPECIALTIES COMPANY
4114 No. Knox Ave., Dept. E-83-A, Chicago 41, Ill.

If you write maker identify as IEN - 8871

HHB Rack & panel connectors . .

Meet requirements for

SIZE . . TYPE . . CAPACITY!

HHB is proud of its many assignments during past years to design and manufacture hundreds of types and sizes of rack and panel connectors for specific applications in electronics.

We invite you to become acquainted with HHB skill and craftsmanship! Ask for the new catalog that has many illustrations of HHB products.

CONNECTORS—CABLE ASSEMBLIES & COMPONENTS
for America's electronics industry . . .

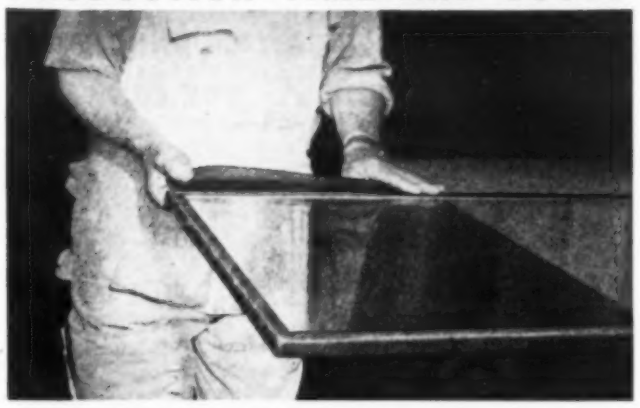
H. H. BUGGIE Inc.
TOLEDO 4, OHIO

Skilled in Electronic Components Parts
RESEARCH • DESIGN
ENGINEERING
MANUFACTURING

Sales Engineers in All Principal Cities

If you write maker identify as **IEN - 8873**

SPRING-FELT SLASHES PRODUCTION TIME AND COSTS



There's virtually no limit to the uses you'll find for Spring-Felt. This convenient pressure-sensitive tape sticks tight with light finger-pressure. For glazing metal windows, it makes channels fit snug—seals out dust, moisture, fumes, drafts—saves valuable time, needs no clean-up.

Made in thicknesses from 1/64" to 1/4"; in widths to 36". Impregnated and unimpregnated types. Damps vibration. Eliminates squeaks, rattles. Cushions. Protects. Write for Bulletin 501.

SPRING PACKING CORPORATION
332 South Michigan Ave., Chicago 4, Ill.

If you write maker identify as **IEN - 8874**

Paltier
"TIERS OF RACKS"
PYRAMID RACKS
PATENTED

SAVE SPACE . . . and YOU SAVE DOLLARS!

PALTIER PYRAMID RACKS are storing as much as 75% and more crushable, bulky and irregular shaped items in the same storage area — in industry after industry. They save their cost in no time at all.

A Paltier User Says:

"We are now able, in one operation, to load and unload various colors or styles of asphalt or asbestos shingles while under previous systems it sometimes required movement of five to eight stacks of material to obtain the pallet where the correct item was stacked"

— a real time saver!

Ask Us!

A Paltier storage engineer will be glad to show you how you can save storage space, too, with the Flexible Paltier System. Ask us, without obligation.

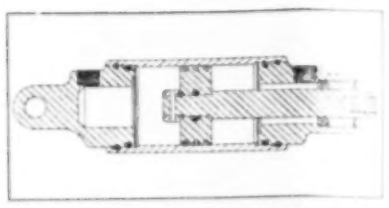
Write for 16-page Catalog

THE PALTIER CORPORATION
1711 KENTUCKY ST.
MICHIGAN CITY, IND.

If you write maker identify as **IEN - 8876**

CYLINDER . . Hydraulic design, 1½ to 8 in. bore, stroke to 18 feet

Source: CARTER CONTROLS INC.
2854 Bernice Road, Lansing, Ill.



Rod is chromium plated

Solid piston, Meehanite cartridge type rod bearing and chevron type packing are the principal points of difference between this new hydraulic cylinder and its companion pneumatic unit, previously described IEN-3456-53. The cylinder is available in various mountings. Its ports can be turned to any required position due to the ring type locks between the heads and the cylinder. The heads are sealed against leakage by O-rings.

If you write maker identify as **IEN - 8877**

CONDUCTOR . . Insulated wire, square and rectangular, to make coils

Source: JOHN A. ROEBLING SONS CO.
612 S. Broad St., Trenton 2, N. J.

Roetemp bulletin upon request

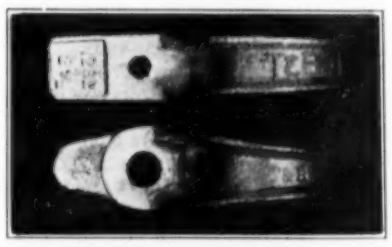
Roetemp trade names a new magnet wire, in square or rectangular section with a spiral wound insulation known as Irv-O-Bestos. The insulation is applied in a single wrap with about 25 per cent overlap and is bonded to the conductor. The wire is suited for Class B transformer windings and electromagnetic devices on operating temperature to 221 deg. F. Average square section dimension for the bare wire is 0.289 to 0.081 in. in AWG sizes from No. 1 to No. 12. Including the insulation, it is 0.309 to 0.101 inch.

The insulation is a combination of two faces of asbestos paper on a center layer of Du Pont Mylar polyester film. The three are bonded together by an agent that retains its adhesive qualities at high temperature. The insulation has excellent dielectric and mechanical strength. It bends without cracking, does not separate from the wire or unravel when it is stripped back part way. It is not impaired by low temperatures. It presents a smooth finish free from loose skin-irritating fibers.

If you write maker identify as **IEN - 8878**

CLAMP . . Malleable iron, to install ½ to 6 in. conduit

Source: THOMAS & BETTS CO.
60-A Butler St., Elizabeth, N. J.



Galvanized

New design of malleable iron clamp, or strap, to install conduit, is shown above the company's previous design in the illustration. The new clamp weighs less and is stronger than the original unit. It is available in a range of sizes for ½ to 6-in. conduit. Size is cast on in raised numerals.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8879**

If you write maker identify as **IEN - 8880**

For factory floors that will not chip . . .
For skid-proof walks where feet won't slip . . .
On all machines that you equip . . .
For floors complete or center strip . . .
Use safe, long-lasting MULTIGRIP!

U·S·S multigrip FLOOR PLATE

UNITED STATES STEEL CORPORATION, PITTSBURGH
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, CHICAGO
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Sold by leading distributors from coast to coast 3-1274

UNITED STATES STEEL

If you write maker identify as **IEN - 8881**

NEW WILLSON Kover-Mor Goggles

with strong, lightweight nylon eye cups

Fit easily over modern prescription glasses . . . use standard 50 mm. round lenses

THEIR IMPROVED DESIGN provides a snug, comfortable fit with ample room for modern large-frame prescription glasses. Sturdy eye cups are molded of tough, non-flammable nylon. Standard 50mm. Super-Tough® lenses used are easily replaced. Well ventilated two ways. Metal top bar is standard on Kover-Mor Goggles.

WILLSON®

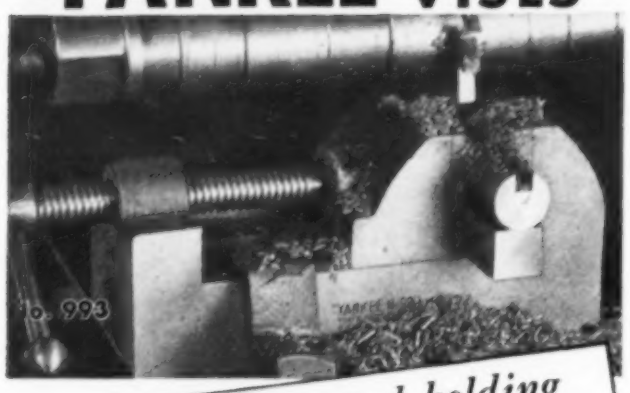
Ask your Willson distributor for new Kover-Mor Goggles*
*Trademark

WILLSON PRODUCTS, INC. • 217 Washington St. • Reading, Pennsylvania

If you write maker identify as **IEN - 8882**

If you write maker identify as IEN - 8883

"YANKEE" VISES



for accurate, work holding
START-TO-FINISH

Every operation is lined up square and true in a "Yankee" Vise. Carefully machined . . . top, bottom, sides and front end to give accurate alignment in any position. Easily made into jig. V-grooved hardened steel block furnished with each "Yankee" Vise. Four sizes . . . 1½", 2", 2¾" and 4" jaw widths. Write for "Yankee" Tool Book.

YANKEE TOOLS NOW PART OF STANLEY THE TOOL BOX OF THE WORLD

NORTH BROS. MFG. CO.
Philadelphia 33, Pa.

If you write maker identify as IEN - 8884

made right
to work right
BENDIX-FRIEZ
high-precision
thermistors

Used in this typical application for sensing temperature of hydraulic oil.

Whether you use these temperature responsive resistors in standard or special models, you can be sure of this. *They'll match your needs* for resistance values, size, temperature coefficient, mountings and quality. Made in our own plant under carefully controlled conditions, Bendix-Friez Thermistors know no equal.

STANDARD TYPES FOR IMMEDIATE DELIVERY

Size (inches)	@ +30°C.	@ 0°C.	@ −30°C.
.140 x .75	45.0 ohms	86 ohms	194 ohms
.040 x 1.5	12,250 ohms	26,200 ohms	65,340 ohms
.018 x 1.5	35,000 ohms	82,290 ohms	229,600 ohms

Write for details.

FRIEZ INSTRUMENT DIVISION of Bendix Aviation Corporation
1428 Taylor Avenue, BALTIMORE 4, MARYLAND
Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

If you write maker identify as IEN - 8885

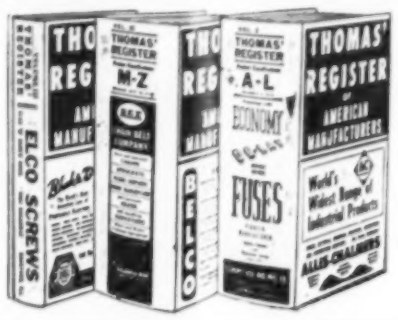
FREE SAMPLE

- Makes and keeps belts soft and pliable
- Pliable belt "clings" to "surface" of pulley
- Dissolves hard "glaze" that makes belts slip
- Only belt preservative that has met and passed U. S. Government Tests and Requirements
- Sold with money-back guarantee since 1896

Cling-Surface Company, Inc.
1044 Niagara Street • Buffalo, New York
Please send me FREE sample can of Cling-Surface "50" Belt Preservative
Name .....
Title .....
Company .....
City ..... State .....

For Your Special Information

ALL MAKERS ARE LISTED — IEN S-26



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

At the bottom of the editorial columns, through each issue of IEN, you will see the two line statement we have reproduced under the picture just above. This statement is to say that you will find, in Thomas' Register, with which Industrial Equipment News is affiliated, complete listings of all products made in the United States. The Register stands completely alone as the product-source reference in which thousands of products not only are listed but also are clearly defined. No other source-information publication even approaches it.

Note . . Please do not confuse this regular edition of the complete Thomas' Register with the Junior edition described elsewhere in this issue. The latter is a compilation of selected products, manufacturers and their addresses. The Junior edition is offered to Industrial Equipment News readers without charge at this time each year as long as the limited supply holds out.

INDUSTRIAL ENGINEERING CONFERENCE — IEN S-27

Michigan State College, East Lansing, Mich., announces its Fifth Annual Conference for September 14 to 18. It will cover six interest groups including motion and time study for beginners and advanced students, materials handling and plant layout, production control, quality control, industrial engineering for small plants. The meetings will be held on the campus in the Student Union Building. Housing facilities will be available at the new Kellog Center. Ask Professor James M. Apple, Department of Mechanical Engineering for a copy of the program.

YOUR SCRAP RECTIFIERS — IEN S-28

Gather up any defective or scrap selenium rectifiers you may have and send them to Sarkes Tarzian Inc., 415 N. College Ave., Bloomington, Indiana. The company will allow 2½ cents on each one that is rated to 150 milliampere and 5 cents on each one rated between 100 and 200 milliamperes, or more. Transportation charges, by the least expensve way, will be allowed on shipments of 50 lb. or more. The company proposes to salvage the selenium and will make the credit allowance against purchase from it of new rectifiers.

INSTRUMENT EXPOSITION — IEN S-29

Instrument Society of America will hold its Eighth Annual Exhibit at the Sherman Hotel in Chicago on September 21 to 25. The show will cover some 34,000 square feet of floor space and will be the largest held so far.

Best U. S. investment:

United States Savings Bonds

If you write maker identify as IEN - 8886

IRON BULWARK
AGAINST CORROSIVE FLUIDS

Fairbanks®
all iron gate valves

. . . made of high-test alloy iron to withstand the action of many of the strongest chemicals, give long service under severe operating conditions. These, like all other Fairbanks Valves are low in maintenance cost, easy to operate and long-lasting in service . . . a real answer to cost-cutting needs today.

Fig. 0904 ALL IRON GATE VALVE 125# SWP 200# WOG Solid Wedge Taper Seat Malleable Iron Seat-Rings 2"–12" Sizes

Fig. 0318 ALL IRON GATE VALVE 150# SWP 225# WOG

Fig. 0418 IRON BODY U-BOLT GATE VALVE 150# SWP 225# WOG

For other types of corrosive fluids such as dry carbon dioxide, ethyl acetate, and malt beverages, use FAIRBANKS BRONZE SOLDER END AND FAIRCO-BRAZE (Silver-Brazed) Valves.

For full details consult your distributor or write direct

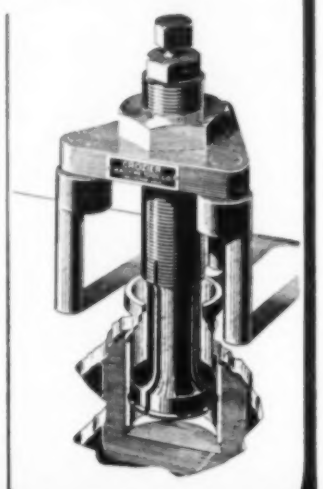
THE Fairbanks COMPANY
393 LAFAYETTE STREET • NEW YORK 3, N. Y.
Branches: New York 3 • Pittsburgh 22 • Boston 10 • Rome, Ga.

CASTERS • TRUCKS • VALVES • DART & "PIC" UNIONS

If you write maker identify as IEN - 8887

NEW EXTRACTOR
removes bushings from blind holes
. . . cuts time 75 per cent

The entirely new method of extracting bushings, bearings, sleeves, liners, etc. Eliminates necessity for machining, minimizes the hazard of injury to casings or excessive dismantling of equipment, handles holes from ½ to 2"—over 5 tons have been extracted with unit. Eliminates as much as 75 per cent of labor and time, slashes inventory.



For complete information write Department IEN-8.

CROZIER *Machine Tool Co.*
684 NO. PRAIRIE AVENUE, HAWTHORNE, CALIFORNIA

If you write maker identify as IEN - 8888

DRYBROW
"The Nation's Sweat Band"

★
TAKES THE "LAG" OUT OF HOT TEMPERATURE PRODUCTION
★

Sixteen year record proves DRYBROW ups production of all people who perspire at their work. DRYBROW pays for itself every hour it is worn—lasts for months and is completely sanitary.

No other sweatband combines DRYBROW'S exclusive patented features—1. Sponge reinforced for longer life. 2. Free-floating, self-adjusting, all rubber head-band eliminates strain on sponge.

TRY A DRYBROW AT OUR EXPENSE. WRITE FOR FREE SAMPLE.

Boxes of 25—1 to 39 boxes, $4.00 per box; 40 boxes or more, $3.50 per box.

AMERICAN ALLSAFE CO., INC.
1245 Niagara Street — Buffalo 13, N. Y.

If you write maker identify as IEN - 8889

Huck

LOCKBOLTS* SAVE
up to 64% of sheeting time on
BUTLER BUILDINGS

They can effect similar labor savings on your metal to metal or wood to metal assemblies.

There is a Huck engineer in your territory who will be glad to help you on any fastening problem at no cost to you of course. Call, Wire or Write:

** Manufactured under U.S. patents, other patents pending.*

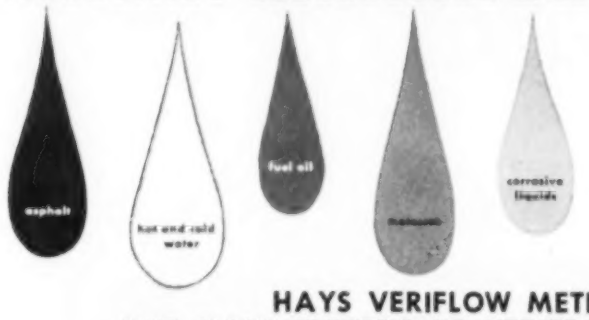
Form 8-203

Call, Wire or Write:

Huck **MANUFACTURING COMPANY**
2480 BELLEVUE AVE. • DETROIT 7, MICH.

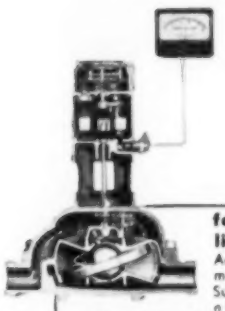
If you write maker identify as IEN - 8890

viscosities unlimited



HAYS VERIFLOW METER AND HAYS ELECTRONIC VERITROL

indicate and control liquid flow



Now virtually all fluids can be precisely measured and controlled—*from a remote position.*

Hays VERIFLOW meter accurately measures, indicates, and totals the flow of corrosive and hard-to-meter liquids without using weigh tanks, orifice plates, or gage sticks. With the Hays VERITROL you simply set a knob at the rate of flow desired . . . then, the VERITROL controls the flow of liquid at that set-rate. *Send for Pub. No. 53-766-38.*

for corrosive liquids
Acetic Acid, Aluminum Potassium Sulphate, Ammonia, Calcium Compounds, Carbolic Acid, Formaldehyde, Fruit and Vegetable Juices, Hydrogen Peroxide, Phosphoric Acid, Potassium Hydroxide, Sodium Compounds, Sulphuric Acid (concentrated), Stearic Acid, and many others.

THE hays CORPORATION
MICHIGAN CITY 16, INDIANA

If you write maker identify as IEN - 8891

Exclusively in WESTON all-metal THERMOMETERS

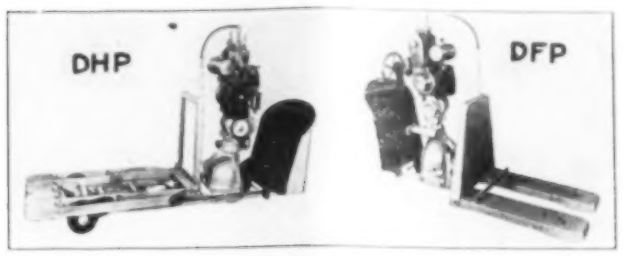
Although WESTON provides sensing elements of various forms for special applications, the element in all standard WESTON Industrial Thermometers is a *multiple helix* as illustrated above. Why the more costly *multiple,* instead of the single, helix? *Just one reason.* WESTON's twenty years' experience producing bi-metal thermometers for industry has furnished convincing proof that the shorter, non-sagging *multiple* helix provides better accuracy, over longer periods. And while it provides other advantages, the one thing most thermometer buyers demand is long-term dependability. You get it, in extra measure, in WESTON Thermometers with *multiple* helix. WESTON Electrical Instrument Corp., 614 Frelinghuysen Avenue, Newark 5, N. J.

WESTON *Thermometers*

If you write maker identify as IEN - 8893

TRUCK . . Engine driven power lift for skids and pallets, to 4,500 lb.

Source: TRUCK-MAN DIVISION
591 Liberty St., Jackson, Mich.



Truck-Man Bulletin

Model DHP, rating 4,500 lb. for skids, and Model DFP, to handle loads to 3,500 lb. on pallets, are new designs in the company's line of trucks for power lift as well as travel. Both units are equipped with hydraulic pumps and 360-deg. swivel connections to power lift cylinders from the top of the combination drive and steering assembly.

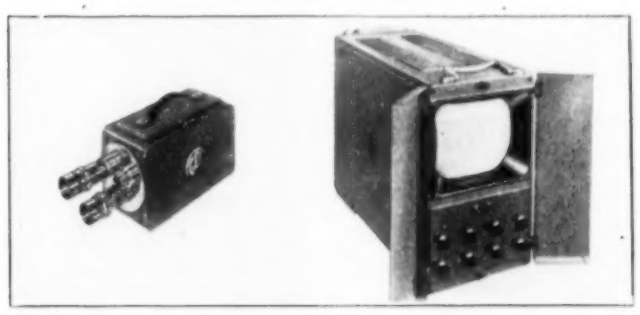
The platform on Model DHP measures 27 by 54 inches. Lift movement is through 3¾ inches. Standard lowered height is 9¼ inches. The truck measures about 102 in. overall. Turning radius is 84½ inches. The two-speed transmission provides travel speed between 1 and 6 mph.

The forks on Model DFP are standard at 40 and 48 in. in length. Overall width is 27 inches. Lift movement is through 4 in. from a standard 3¼ in. above the floor. Overall length is about 98 in. and turning radius is 90½ in. with 48-in. forks. Travel speed is 1 to 5 mph. with a capacity load.

If you write maker identify as IEN - 8894

SIGNALING . . Television equipment reproduces observed remote conditions

Source: GENERAL PRECISION LABORATORY INC.
61-65 Bedford Road, Pleasantville, N. Y.



Application survey on request

Miniature camera, employing standard 16-mm. motion picture lenses and a Staticon photo-conductive tube, connects by coaxial cable to a combination receiver, or monitor, and control in this new industrial television equipment. Two outputs from the control include composite video and radio frequency signals that can be tuned to any of the first six channels in the television band. This permits use of additional standard television receivers.

The control includes actuation for a new camera pedestal that permits swinging and tilting the camera, selecting the desired focusing and setting the iris. Equipment is available for fixed as well as portable use, for installation of several cameras to one or more receivers, or a single camera to one or several remote receivers.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8895

Models 1000 WV, 2000 WV & 5000 WV—AC only

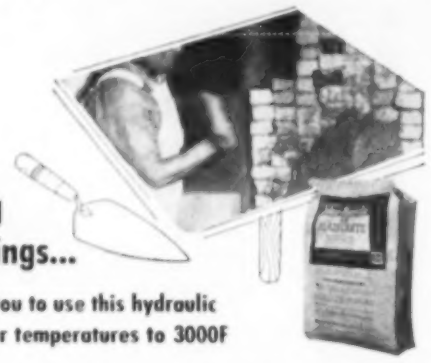
For hard soldering, soft soldering and spot welding precious and dissimilar metals. Spot welds steel parts up to 3/16 of an inch thick; welds brass up to .080"; solders brass up to ¼ of an inch. Has myriad applications in small metal parts production.

Write for catalog of complete line.

JOYAL PRODUCTS, INC. 568 BELMONT AVENUE NEWARK 3, N. J.

If you write maker identify as IEN - 8896

J-M BLAZECRETE builds longer lasting refractory linings...



That's why it pays you to use this hydraulic setting refractory for temperatures to 3000F

Blazecrete* linings last longer because they resist spalling, withstand slagging action, and are not harmed by rapid temperature changes.

Thus you cut down on refractory maintenance costs and you save on labor costs, too, because Blazecrete goes on fast. For troweling, just mix Blazecrete with water as you'd mix ordinary concrete . . . then slap-trowel it in place. When gunned, it adheres readily with a minimum of rebound loss. Either way, Blazecrete goes on fast without laborious ramming or tamping.

Three types of hydraulic-setting Blazecrete are available.

*Reg. U. S. Pat. Off.

3X BLAZECRETE—For temperatures through 3000F. Excellent for forge furnace linings, lime kilns, burner blocks, soaking pits, and industrial boilers.

STANDARD BLAZECRETE—For temperatures through 2400F. Can be used by boiler manufacturers to replace fire clay tile in wall construction.

L. W. BLAZECRETE—For temperatures through 2000F. An insulating refractory . . . light in weight, low in thermal conductivity.

For full details, send for Brochure RC-28A. Write Johns-Manville, Box 60, New York 16, N.Y. In Canada, 199 Bay St., Toronto 1, Ontario.

Johns-Manville BLAZECRETE
BUILDS BETTER REFRACTORY LININGS

If you write maker identify as IEN - 8897

ELIMINATE WIRES

through use of

DU PONT CONDUCTIVE COATINGS

Easily and rapidly applied by spray, brush, dip, stencil to metals and non-conductors, they give a conductive surface of low resistance. One troy ounce covers about 3 sq. ft. Use them in printed circuits for radios, amplifiers, switchboards, meters; for capacitors and couplings; for static shielding to replace foils and cans; for resistors and solder seals. Save hours of time, $$$$ of cost! For more information, send for Bulletin CP-2-1247. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Delaware.

DU PONT ELECTROCHEMICALS

DU PONT

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

If you write maker identify as IEN - 8898

Speed Up Material Handling

Here's a handy, mobile crane for lifting or loading jobs around your plant. Ideal for dismantling, moving or erecting machinery . . . loading and unloading structural iron, pipe, bars, lumber and equipment of all types. The UNIT 357 is self-propelled . . . rides on rubber at road travel speed . . . is easy to maneuver even in cramped yard conditions. Operated by ONE man . . . powered by ONE engine . . . swings in a 360° circle. Full vision cab gives complete visibility. Promotes Safety. Write for Catalog.

UNIT CRANE & SHOVEL CORP.
6605 W. Burnham Street, Milwaukee 14, Wis., U. S. A.

UNIT
CRANES • CLAMSHELLS • MAGNETS

If you write maker identify as IEN - 8899

NOW! AN EASIER, FASTER WAY
To Apply Sealing Compounds

New ALEMITE
VERSATAL PUMP

A PRODUCT OF SW STEWART WARNER

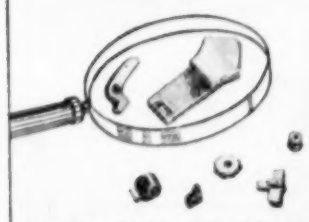
★ Air operated! Dispenses material direct from original bulk drums.
★ Assures positive and uniform delivery through long lines with complete safety.
★ Lays hundreds of lineal feet per man-hour with far less product spoilage.

FREE! This book of ideas on how Alemite Versatal equipment can speed, simplify your handling problems. Address your request to Alemite, Dept. B-83, 1830 Diversey Parkway, Chicago 14, Illinois.

ALEMITE Versatal SPRAY-PUMP EQUIPMENT

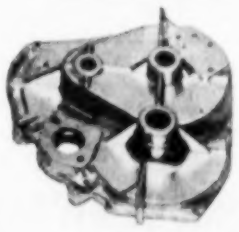
If you write maker identify as IEN - 8900

LOW COST PARTS
Specialized Equipment Cuts Costs Through All Commercial Sizes



DOLLIN
Zinc & Aluminum
DIE-CASTINGS

SMALL ZINC CASTINGS
1000 per lb. to 3 per lb.
Specialized high speed, automatic machines.



ALUMINUM CASTINGS
Cold chamber type, high pressure machines for all sizes.

LARGE ZINC CASTINGS
Large plunger type machines.

Send prints or samples for quotation. Engineering advice at no obligation.

DOLLIN CORPORATION 630 South 21st Street Irvington 11, New Jersey

If you write maker identify as IEN - 8901

SAVE TIME AND MATERIALS

Oil-hardened tool steel tapered pin gages accurate to + 0.0001" − 0.0000" insure dependable sizing and location of holes and slots for machinists, set-up men, tool and die men, inspectors, all who need precise hole measurement.

CONCENTRIC TAPER on lower half of each gage fits holes 0.0012" smaller than standard letter, fraction, and number size drill holes. Makes insertion easier. Permits gaging of odd-size holes and slots.

ALL GAGES are 1½ inches long. Sets contain a pair of each size in a plastic case with 4-place decimal equivalents of each size plainly marked.

ALL ITEMS STOCKED FOR IMMEDIATE DELIVERY

THE Horberg GAGE COMPANY
31 STAPLES ST., BRIDGEPORT, CONN.

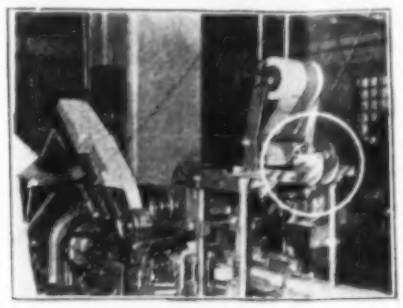
Quantity
..... Letter sets @ $45. 52 gages (A-Z)
..... Fraction Sets @ $30. 60 gages (1/64" to 1/2" in 1/64" steps)
..... Number Sets @ $90. 120 gages (1 to 60)
..... Single gages @ $ 1.
..... Stand alone @ $10.

Please Rush checked items and literature to
company .....
address .....
name .....
title .....

If you write maker identify as IEN - 8902

MARKING .. Coding attachment prints date, shift, badge, plant

Source: KIWI CODERS CORP.
3802-6 N. Clark St., Dept. IEN, Chicago 13, Ill.



On a butter wrapper

Code-Dater designates a marking attachment for packaging equipment that has been in use for some time on butter wrapping machines, as shown in the illustration. It is now offered for general use to print required codes on a packaging wrapper as it feeds from its point of supply. For this purpose, its traction wheel assembly in which the marking type are located is positioned to ride on the packaging sheet.

The assembly encloses a required number of sets of rubber type, to a maximum of eight, each reading from 0 to 9. Imprints are made about every 3½ in. using the company's No. 1 type. The codes are changed by turning small wheels. The type ride against an inking wheel employing odorless, non-toxic, water-proof ink. Metal parts are non-corrosive chromium, stainless steel and brass.

If you write maker identify as IEN - 8903

TESTING .. Portable X-ray capacity to penetrate 4 in. of steel

Source: HOLGER ANDREASEN INC.
701-5 Market St., San Francisco 3, Calif.

Made in Denmark

A new model rating 250 kvp. has been added to the 120 and 175-kvp. units, previously described IEN-886-53. Overall weight, including the control, is about 350 pounds. The equipment fits into the trunk of a motor vehicle. The x-ray tube and associated high tension parts are combined in a welded steel cylinder. Operation can be specified on 110, 220 or 440-volt ac.

Insulated handwheels, at the two ends, provide rolling support and also act as stands on which the unit can be set up. Photographs are made through an opening in the side. An exposure interval of 2 to 4 min. is sufficient to make an X-ray picture. The focal spot is 4 mm. A 17-in. film is covered at a focus film distance of 24 inches.

If you write maker identify as IEN - 8904

Plastic coating, continuous, flexible, smooth, can be applied, on a contract basis, on flexible steel tube, metal and paper jacketed tube, by Pyramid Plastics Inc., 552-56 W. Polk St., Chicago 7, Ill. The company will supply details.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8905

keep HANDS and FINGERS away from PRESS RAM

LITTELL
Air Blast Valves
Eject Automatically by Air . . . not by Hand

SAVE TIME . . . . . Faster production and lower labor costs
SAVE AIR . . . . . Reduce air consumption 92 percent
SAVE DIES . . . . . No damage to dies due to clogging
SAVE HANDS . . . . . Keep operators' hands and fingers out of danger zone
SAVE MONEY . . . . . Insurance premiums are lower when accidents are reduced.

QUICKLY INSTALLED—Littell Air Blast Valves can be installed on any make or size press in only a few minutes.

F. J. Littell MACHINE CO. AIR DIVISION
4133 RAVENSWOOD AVE., CHICAGO 13, ILL.
— District Offices: Detroit and Cleveland —

Write for Catalog

If you write maker identify as IEN - 8906

NOW AVAILABLE

Grieve-Hendry STANDARD CABINET OVENS
No Engineering Charges

Cross and Vertical Flow

● Large capacity ● Perfect Temperatures to 650° and 850° F. ● High volume pressure blower forced circulation ● Lowest cost source of heat processing capacity ● Latest convenience features and safety devices.

Standard Models to 1000° F.
$7950 and up

PROMPT SHIPMENT
Write for Bulletin

GRIEVE-HENDRY COMPANY, INC.
1815 W. Lake Street, Dept. IEN • Chicago 12, Ill.

If you write maker identify as IEN - 8907

Look To The Leader For Lubricating Devices
GITS

40 Years' Leadership

Yes, for 40 years GITS has been setting the standard for industry... solving tough lubricating problems...earning the confidence of manufacturers . . . it's the reason people say, "Call GITS first".

Low Cost

Yes, GITS oil cups can do a complete lubricating job for you . . . prolonging bearing life, reducing maintenance costs, cutting down-time, boosting production . . . and GITS oil cups cost so little.

World's Largest Selection

Yes, only GITS can offer you such a wide range of standard stock sizes. From *just one* source you can get *all* lubrication devices in *any design* for *any purpose*..

Consistent Top Quality

Yes, GITS is known for uniform quality in design, materials and machining . . . this means constant, dependable performance for you. Inferior products can cost you time and money. Demand the best . . . get GITS.

Write Today for FREE CATALOG No. 60A Use it as your handy reference for lubricating devices

Oil Hole Covers, Oil Cups, Grease Cups, Bottle Oilers, Gauges, Gravity-Feed, Wick-Feed, Constant Level, Vibrating Rod Styles, Threaded or Drive-Type, Elbow or Straight.

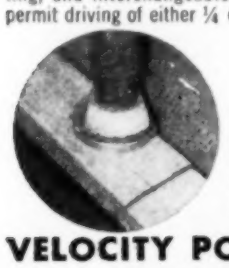
GITS BROS. MFG. CO.
1854 S. Kilbourn Ave. Chicago 23, Ill.

If you write maker identify as IEN - 8909

Now! The VELOCITY-POWER DRIVER

with permanently attached Spall-Shield ...faster...safer STUD SETTING

Saves time, money, labor in electrical, heating, plumbing, air conditioning installations—both construction and maintenance. Sets studs in steel or concrete in seconds—just load, position, fire—job done. Integral cartridge eliminates matching and fitting, and interchangeable barrels permit driving of either ¼ or ⅜-in. studs with same firing unit. Solid head, internal or external threaded type studs available. Permanent spall-shield aids safety. Spring loaded safety arm and center-fire cartridges avoid accidental discharge, and assure right load for the job. Write for details.

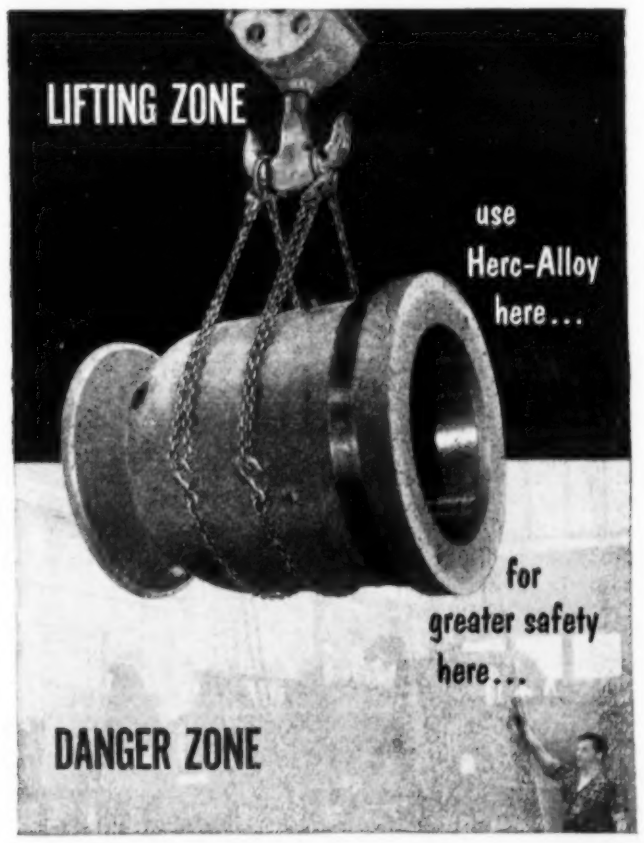


◄ For close-to-the-wall jobs, section of spall-shield can be lifted, and turned out of the way.

Still available—model with separate spall-shield. ►

VELOCITY POWER TOOL COMPANY
201 North Braddock Avenue, Pittsburgh 8, Pa.

If you write maker identify as IEN - 8910



SPECIFY

HERC-ALLOY

SLING CHAINS

Write for Data Book

Hundreds of plants like the one shown above* are using Herc-Alloy Sling Chains. Greater safety is their big reason for doing it. But there are other factors too. Herc-Alloy is economical because of its long service life. Then too, the use of alloy steel permits a weight reduction that helps prevent worker fatigue. These advantages are worth thinking about. Those who do consider them seriously generally adopt safe Herc-Alloy Sling Chains for their plants.

HERC-ALLOY Sling Chains are made-up to order, are individually tested, registered and guaranteed.

*Lake Erie Engineering Corporation — Manufacturer of Hydraulic Presses

COLUMBUS McKINNON CHAIN CORPORATION
TONAWANDA, NEW YORK
DISTRICT OFFICES: NEW YORK, CHICAGO, CLEVELAND

If you write maker identify as IEN - 8912

INSULATING . . Aluminum paper sheet reflects heat, acts as vapor barrier

Source: RUBEROID COMPANY
500 Fifth Ave., 34th Floor, New York 36, N. Y.

250 square feet rolls

Reflective Insulation is a new combination of Kraft paper and aluminum foil for use in buildings and structures. It will reflect 95 per cent of the radiant heat rays that strike it. It will prevent passage of moisture. It can affect fuel saving to 30 per cent in the winter time and temperature reduction as much as 15 degrees in the summer. Installation is no problem other than to provide air space on both sides of the insulation. Greater insulating action can be obtained by the use of two or more sheets.

If you write maker identify as IEN - 8913

PORCELAIN ENAMELING . . Frit, particularly to apply on aluminum

Source: FERRO CORPORATION
4148-52 E. 55th St., Cleveland 5, Ohio

A DuPont development

New frit is now available from the company, particularly for use on aluminum. The materials melt at about 1,000 deg. F. Standard frits, used on steel, are processed at about 1,500 deg. F. Application can be made with ordinary enameling and firing procedures, after the aluminum has been prepared, except for the lower operating temperature. The coating will permit the use of light gage aluminum. It is available in colors and is characterized by its resistance to corrosion, abrasion, thermal shock, impact, and flexing.

If you write maker identify as IEN - 8914

MARKING . . Self-adhesive labels to code identify small wires and parts

Source: WESTERN LITHOGRAPH CO.
602-6 E. 2nd St., Los Angeles 54, Calif.

No moistening

One backing card, 2 by 10 in., holds 68 coated fabric labels, each measuring ¾ in. in length. The two long sides of the card lie inside of projecting tabs with which individual labels can be picked off without removing any others. The new units are available in 1,000 codes, including ASA and NEMA specifications, in the company's E-Z Code line.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8915

If you write maker identify as IEN - 8916

NOW... *Correct Taper*

—FOR MAXIMUM GRIP
—FOR EASY REMOVAL
IN

INTERCHANGEABLE TAPERED **BUSHINGS AND SPROCKETS**

BOSTON Gear

SHOLD-A-GRIP

Correct Taper

—FOR STRONGER, SLIP-PROOF GRIP
—FOR EASY REMOVAL. Provides maximum holding power, even on worn shafts. Permits easy disassembly.

Broader Size Range

FIT SHAFTS ½" to 2½" BY 16THS
Any commonly used sprocket, ½" to 2¼" pitch can be interchanged on an extended range of shaft sizes.

FOR COMPLETE INFORMATION, ask your BOSTON Gear Distributor, or write: Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

SEE YOUR **BOSTON Gear DISTRIBUTOR**

If you write maker identify as IEN - 8917

modernize materials handling with

CARGOTAINERS

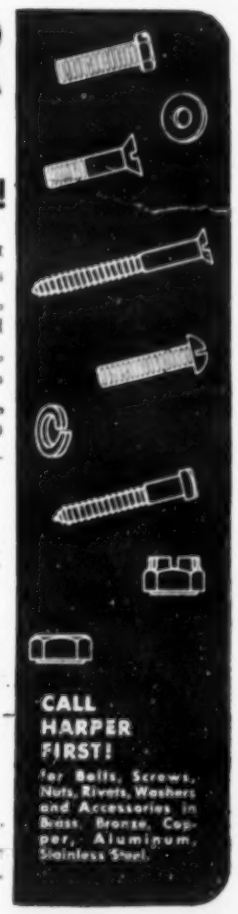
Cargotainers are designed to keep pace with modern methods of materials-handling because they are: 1. Sturdy and resistant to shock; 2. Readily folded when not in use; 3. Open mesh so that contents may easily be seen for quick inventory; 4. Efficiently designed for shipment, assembly line use, and vertical storage. Write for information concerning the new CLEARVIEW model with its exclusive base construction for greater durability and better locking and stacking. Dept. IEN, Pittsburgh Steel Products Co., Grant Bldg., Pittsburgh 30, Pa.

Pittsburgh Steel Products Company
A Subsidiary of Pittsburgh Steel Company

If you write maker identify as IEN - 8918

HARPER

Specialist in *all* Non-Corrosive Fastenings!



Call Harper *first!* America's largest producer of non-ferrous and stainless steel fastenings—specializing in bolts, screws, nuts, rivets, washers and accessories in brass, bronze, copper, aluminum, Monel, stainless steel—to solve your problems in corrosion, heat, abrasion and stress. Over 7,000 items stocked by warehouses and distributors from coast to coast.

FREE—*this 56-page Harper Price List and Stock Book.*

HARPER
EVERLASTING FASTENINGS

The H. M. Harper Company
8211 Lehigh Ave.,
Morton Grove, Ill.
Rush Harper Price List and Stock Book.
Name.....
Address.....
City.....State.....

CALL HARPER FIRST!
for Bolts, Screws, Nuts, Rivets, Washers and Accessories in Brass, Bronze, Copper, Aluminum, Stainless Steel.

If you write maker identify as IEN - 8919

STURTEVANT ROTARY FINE CRUSHERS

Crush or Granulate to Fine, Even Sizes without Excess Dust...

Cross section view illustrating the crushing action.

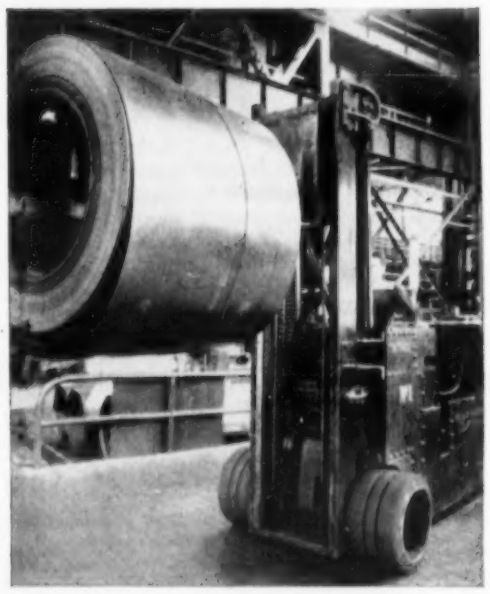
These rugged crushers speed output of fines, cut reduction costs. Desired fineness is quickly obtained by regulating hand wheel. "Open-door" accessibility permits fast, easy cleaning. They crush fine . . . crush fast and do not clog. Available in output capacities from 1 to 30 tons-per-hour. Write for catalog.

STURTEVANT MILL COMPANY
113 CLAYTON STREET, BOSTON 24, MASS.

If you write maker identify as IEN - 8920

B.F.Goodrich

TW ANALYSIS solves your industrial tire problems, saves you as much as 50%



● What's your industrial tire problem? Too much power-consumption or rolling resistance? Not enough traction? Cushioning or flotation? Or is it cutting, tread chipping or oil damage? No matter what it is, there's an industrial tire designed to solve it, one that may give you up to *twice as much service* as any other tire.

To help you specify this tire, B. F. Goodrich has developed the Tire and Wheel Analysis Plan. Without obligation, a trained BFG man will study your materials handling operations. He'll recommend the right type tires for you to use—solid, semi-pneumatic or pneumatic. He'll tell you what tread design is best—smooth, directional, non-directional—and if a special tread compound should be used.

Follow the TW Analysis man's advice and you can save as much as 50% on industrial tire costs. And his maintenance tips can cut your bills up to 20%. His advice is impartial, for B. F. Goodrich makes, and BFG retailers sell, a complete line of industrial tires.

To find out more about this free B. F. Goodrich Tire and Wheel Analysis Plan, mail the coupon or call your BFG retailer. A special TW Analysis Plan is available for manufacturers of industrial handling equipment.

Specify B. F. Goodrich tires when ordering new equipment

The B. F. Goodrich Co.
Department TW-155, Akron 18, Ohio

Please send me:

☐ *Additional information* on your new Tire and Wheel Analysis Plan

☐ A free copy of your "Industrial Tire Guidebook".

Name _____

Company _____

City _____ Zone ____ State ____

If you write maker identify as IEN - 8922

GRINDING . . Pneumatic tool drives mounted wheels at 100,000 rpm.

Source: NU-JETT PRODUCTS
1333-37 Michigan St. N. E., Grand Rapids 5, Mich.

Weighs four ounces

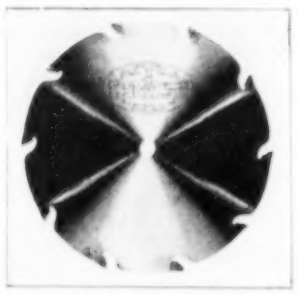
Compressed air, at 50 lb. or more, moves through opposed spiral passages in the barrel and rotor of this new 4-in. Nu-Jett grinding tool. The rotor is mounted in two New Departure ball bearings that can be replaced quickly. Exhaust air issues at the forward end to keep the work surface clean.

The tool is designed for use in die grinding, wood carving, etching, polishing. It is particularly suited to drive carbide burrs. Its high speed conserves the life of an abrasive wheel. Standard equipment includes 6 ft. of air hose, a filter, control valve, chuck and wrench.

If you write maker identify as IEN - 8923

SAWING . . Carbide tipped blade, safety design for non-metallic work

Source: W. F. MEYERS CO.
1019 14th St., Dept. 18, Bedford, Ind.



Produces clean chips

The blade body, back of each of the carbide tips in this new circular saw blade, controls the depth of chip that can be taken by the blade and so prevents overloading it. The blade will not kick back at the operator or pull his hands into it in the event of an accident. Application can be made on wood, plastics, masonite, plywood, impregnated plastics, asbestos, Formica.

The blade is suited for use on any type of table, bench, radial, or portable machine with hand or power feed. Diameter is 5⅞ to 16 inches. The smallest has six teeth and the largest has sixteen. Round, square or diamond center hole can be specified.

The company also has set up a regrinding service on which it quotes 50 cents per tooth for a complete regrind on the top and face. It will retip bodies for $1.50 per tooth. List price for the new blade ranges from $14.40 to $49.95.

If you write maker identify as IEN - 8924

Out of the war has come a new unit of transportation equipment, a lighter that travels under its own power on land, through swamps, in deep water. It is being made by American Pipe and Steel Corporation, 2203 W. Commonwealth Ave., Alhambra, California. Ask for a copy of the new illustrated Amphibious Lighter literature.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8925

This TUFFLEX sample kit MAY SOLVE YOUR PROBLEM

Seeing is believing—and this kit, containing actual samples of Tufflex may point the way to new product improvements and cost-saving for you. Tufflex is the amazing felted cellulose fiber that's fleecy, soft and tough at the same time. Tufflex resists heavy impact blows—die-cuts with clean edges—insulates—absorbs sound. Its wonderful flexibility suits it to a wide variety of uses. Send now for your free Tufflex sample kit and full information. Wood Conversion Company, Dept. 126-83, First National Bank Building, St. Paul 1, Minnesota.

Keep Your Eyes On . . . **TUFFLEX***

Guaranteed by Good Housekeeping

Cellulose Cushion Padding

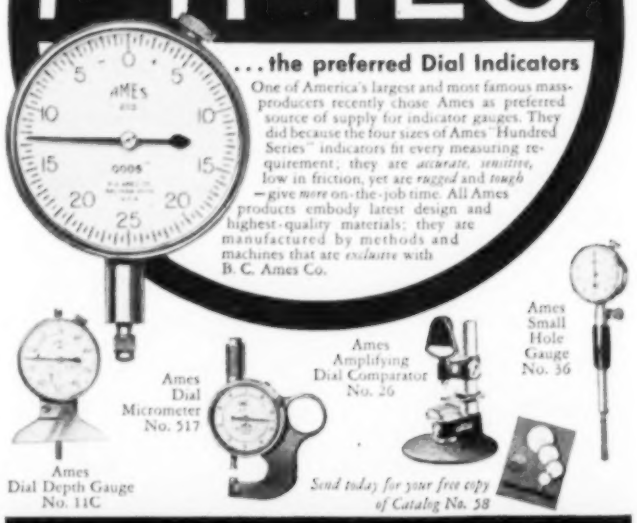
*REG. U.S. PAT. OFF.

If you write maker identify as IEN - 8926

AMES

. . . the preferred Dial Indicators

One of America's largest and most famous mass-producers recently chose Ames as preferred source of supply for indicator gauges. They did because the four sizes of Ames "Hundred Series" indicators fit every measuring requirement; they are *accurate, sensitive,* low in friction, yet are *rugged* and *tough* —give *more* on-the-job time. All Ames products embody latest design and highest-quality materials; they are manufactured by methods and machines that are *exclusive* with B. C. Ames Co.



Send today for your free copy of Catalog No. 58

Representatives in principal cities. **B. C. AMES CO.** *33 Ames Street Waltham 54, Mass.*

Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

If you write maker identify as IEN - 8927

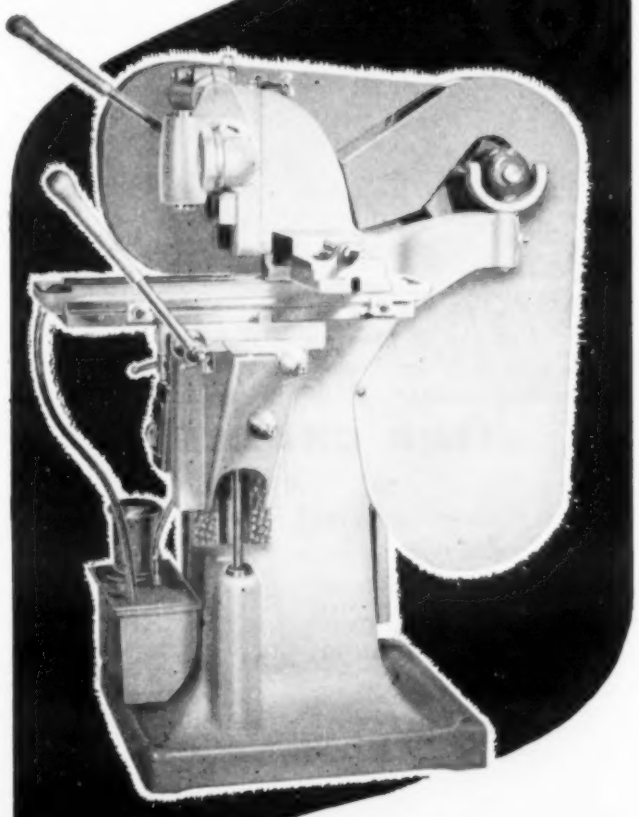
Cut Costs

on Tool Room, Development and Mass Production Milling with

U. S. No. 1

HORIZONTAL MILLING MACHINES

Time-proved, shop-proved, profit-proved "U. S. No. 1" heavy duty, hand-feed milling machines are outstandingly America's No. 1 Machine Tool value. Easily adapted to production with automatic devices.



SEND FOR DATA AND SUGGESTIONS

Suggestions as to how a U. S. No. 1 Milling Machine can cut costs on your particular production needs, as-well as complete data on the basic machine and attachments, gladly furnished on request.

THE U. S.-BURKE MACHINE TOOL DIV.
Brotherton Road 5
Cincinnati 12, Ohio

If you write maker identify as IEN - 8929

NEW INDUSTRIAL HUMIDIFIER

BAHNSON TYPE E Self-Contained Unit Humidifier

Requires only water supply and electrical connection

NOTE THESE FEATURES!

- HIGH CAPACITY—Evaporates 3 gallons per hour with ¼ HP motor.
- AUTOMATICALLY CONTROLLED at any desired relative humidity.
- SIMPLE TO INSTALL—Just uncrate and suspend from ceiling.
- ELECTRIC MOTORS for all common current characteristics.
- WATER SUPPLY connection for ¼" tube or ⅛" pipe provided.
- NEEDS NO pump, duct, compressed air, steam, drain or floor space.
- EFFICIENT centrifugal atomization of ordinary city water.
- TWO MODELS, ¼ HP for high capacity, ⅛ HP for small rooms.

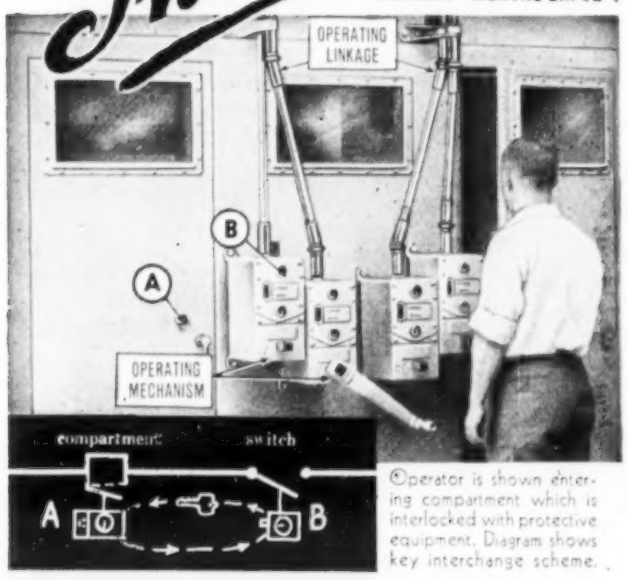
FOR COMPLETE HUMIDIFICATION SYSTEMS, FOR BOOSTING, FOR SPOT HUMIDIFICATION, FOR LABORATORIES

FOR TRULY DEPENDABLE LOW-COST HUMIDIFICATION — Bahnson Company, ENGINEERS AND MANUFACTURERS, WINSTON-SALEM, N. C.

If you write maker identify as IEN - 8930

FOR SAFETY Interlock!

PROTECT MEN AND EQUIPMENT AGAINST "MENTAL LAPSE".



Operator is shown entering compartment which is interlocked with protective equipment. Diagram shows key interchange scheme.

KIRK KEY INTERLOCK *System*

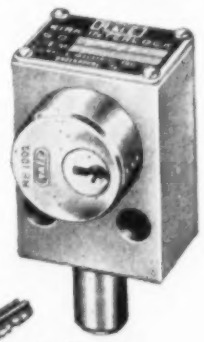
Provides a predetermined sequence of operation...and prevents "mental lapse" which might cause damage to men and equipment.

A Typical application is shown above. "A" is interlocked with "B" to prevent opening of door "A" when switch (locked by "B") is closed and in service. Only when protective switch (with "B" interlock) is opened, and locked open with a Kirk Key can the same key be released to unlock "A" (on door).

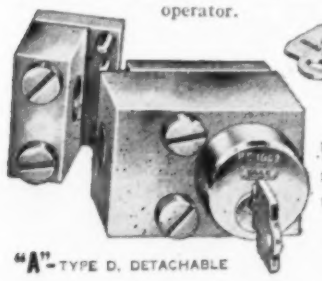
This makes sure that circuits in compartment with "A" interlock are dead and safe to approach. The main switch locked by "B" cannot be reclosed until "A" is locked closed, making the same key available to unlock "B", and thus allow the switch to be closed in again.

The key can now be removed from "B", indicating that the circuits are energized.

When removed, the key is usually kept on a rack and used only by an authorized operator.



"B"-TYPE F FLAT MOUNTING



"A"-TYPE D, DETACHABLE

Unlimited interlocking schemes may be arranged from many types of Kirk Key Interlocks

Write for Bulletin 1700 for many more details.

R&IE EQUIPMENT DIVISION
I-T-E CIRCUIT BREAKER CO.
GREENSBURG, PA.

If you write maker identify as IEN - 8932

VISE . . Universal assembly to position work on a machine table

Source: KUMA TOOL CO.
8747-51 S. State St., Chicago 19, Ill.

5 day approval

The jaws open to 3⅝ in. and are 4½ in. in width in this new vise and universal mounting. Jaw depth is 1⅝ inches. The vise swivels through 360 deg. on its tilting base which can be set at a required angle between horizontal and vertical. The vertical adjustment also swivels through a complete circle on the assembly base. The removable jaws are hardened and ground. Mating surfaces also are ground. Accuracy is guaranteed within 0.001 inch.

Base dimensions are 5 by 9½ inches. Height, in horizontal position, is 5¾ inches. Weight is 27½ pounds. Castings are made of semi-steel. List price is $145.

If you write maker identify as IEN - 8933

CLEANING . . Dry acidic salt mixes with water for steel pickling

Source: MITCHELL-BRADFORD CHEMICAL CO.
2444-48 Main St., Stratford, Conn.

For use in acid proof tank

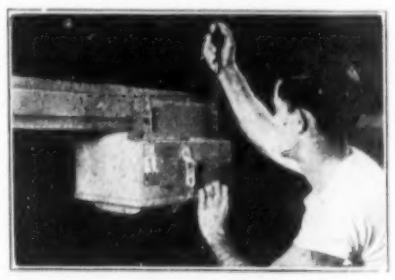
Two pounds of Quick Pik salt, to a gallon of water, provides a pickling solution suitable for corrosion and scale removal on steel in temperature between 70 and 150 deg. F. The salt is packaged in 100 and 400 lb. fiberboard drums.

The formula contains an inhibitor and foaming agent to minimize acid attack on the base metal and to produce foam to cover the bath surface, stop acid spray and minimize fumes above the bath.

If you write maker identify as IEN - 8934

ELECTRIC DUCT . . Connector unit for takeoff from Flex-A-Power busway

Source: TRUMBULL ELECTRIC
39-43 Woodford Ave., Plainville, Conn.



Three minutes to apply

Flex-A-Plug, Type FG, is a new prong equipped connector that applies quickly on the company's Flex-A-Power busway. It employs the circuit breaker principle of arc interruption so it can be disconnected under load without damaging it. Steel side shields protect the prongs. Phenolic insulating shields encase them. Four ratings are 30, 60, 100 and 200 amperes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8935

Tiny parts for the DC-6 get THOROUGH check-up with FLASH-O-LENS

Small parts for the hydraulic system of the famous Douglas DC-6 are inspected for symmetry with FLASH-O-LENS — the handy device that *lights* the work and *magnifies* it.

It will pay *you* to put FLASH-O-LENS to work on your inspection jobs. Built-in bulb throws light *only* on field of vision — *not* in worker's eyes. Accurately ground lens gives sharply detailed enlargement.

Write for free descriptive literature on battery-operated and plug-in types.

E. W. PIKE & COMPANY
492 NORTH AVE. ELIZABETH, N. J.

If you write maker identify as IEN - 8936

Save Valuable Manpower With Automatic Control

T-27 TIME SWITCH

- Adaptable to nearly every time-control job.
- Cuts manpower costs and gives increased efficiency.
- With astronomic dial it follows changing dusk-dawn schedules. An omitting device enables the switch to skip certain days.

Contact your nearest G-E sales office. General Electric, Schenectady, New York. 603-135

GENERAL ELECTRIC

If you write maker identify as IEN - 8937

PROBLEM:

Obtain higher electrical conductivity without increasing the cross-sectional area of spring blades

SOLUTION:

General Plate provided the solution with **BRONCO** a composite metal

Increased conductivity of spring blades in a time switch was recently required by a manufacturer of demand meters. Operating requisites were high conductivity, excellent spring properties and small cross-sectional area.

General Plate provided the solution with BRONCO, phosphor bronze double-clad on copper. The phosphor bronze makes an excellent spring member; the copper gives increased conductivity.

BRONCO 25/50/25 provides an electrical conductivity of 55% compared with solid copper.

BRONCO permits miniaturization. It permits you to make smaller units because you can reduce spring size without sacrificing conductivity.

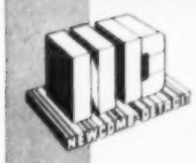
No matter what your problem, you can profit by using General Plate Composite Metals. Write for Catalog PR700 today.

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
78 FOREST STREET • ATTLEBORO, MASS.

If you write maker identify as IEN - 8938

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF



INDUSTRIAL OVENS
•
SPRAY BOOTHS
•
PARTS WASHERS
•
DUST COLLECTORS
•
HEAT and AIR SYSTEMS

ESTABLISHED 1912
- DETROIT DIVISION
- GRAND RAPIDS DIVISION
- NEWCOMB INDUSTRIES, LTD., WINDSOR DIVISION

For Bulletins and Quotations, Wire, Write or Call—
NEWCOMB-DETROIT
5757 Russell St., Detroit 11, Mich.
TR 3-2100

If you write maker identify as IEN - 8939

AMPLICALL equips your business with a pressure-easing internal communication system. Its "clear line" facilities provide 2-second speech contact within and between departments. AMPLICALL frees your busy switchboard for important outside calls—keeps personnel on the job—keeps talk terse—saves "waiting and walking" time. Today, more than ever, your business needs pressure-easing, time-saving AMPLICALL. There is a system to fit your special needs. Get the full facts today!

SEE YOUR PHONE BOOK
For your nearest AMPLICALL specialist, look under "Intercommunication" in your classified phone directory—or write direct for full information.

ELECTRONIC
AMPLICALL
INTERCOMMUNICATION

RAULAND-BORG CORPORATION
3523-K Addison St., Chicago 18, Ill.

If you write maker identify as IEN - 8940

Modernize with
MINI-BREAKER®

. . . the amazing new Permanent Circuit Protector that fits like a fuse in standard Edison base fuseholders!

Never before has there been a circuit protective device like MINI-BREAKER! Because here, for the first time, is a rugged U.L. listed permanent Circuit Protector that can actually be used as a *direct replacement* for expendable plug type fuses. There's no additional equipment to buy, no special wiring or rewiring required when used on existing fuse-protected circuits. No installation cost or needless interruption of electrical service, either. Anyone can install MINI-BREAKERS in a mere matter of seconds just like the "one-shot" fuses they're designed to replace.

PROVIDES PERMANENT PROTECTION AGAINST OVERLOADS AND SHORT CIRCUITS!

Yes, MINI-BREAKERS end forever the needless cost and inconvenience of replacing blown-out fuses. They safely interrupt excessive overloads and short circuits . . . tripping instantly on "shorts," but with a built-in time lag to handle temporary starting loads and line surges. 100% trip-free, too. Yet, as soon as the circuit is safe again, all you have to do to restore electrical service is press in and release the shockproof reset button! Simple, practical, convenient! Never need be replaced!

THE ONLY DEVICE OF ITS KIND LISTED BY UNDERWRITERS' LABORATORIES, INC.!

MINI-BREAKER is a precision-built, pre-tested and inspected "Circuit Protector" . . . the only device of its kind listed by Underwriters' Laboratories, Inc. Now available in 15, 20, and 30 ampere ratings, for A.C. service only, up to 125 volt maximum.

MECHANICAL PRODUCTS, INC.
1824 River Street • Jackson, Michigan

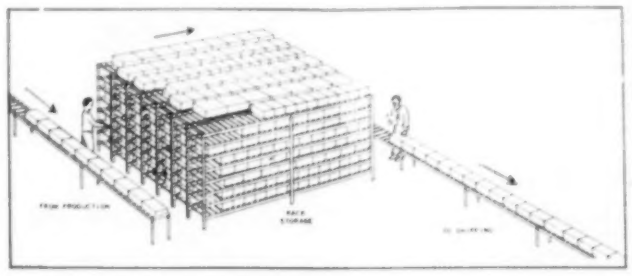
Please rush me full details on new MINI-BREAKER today!
NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

IDEAS FOR YOU

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

If you write maker identify as IEN - 8942

Storage rack, made up of standard wheel sections, holds packaged products ahead of orders for shipping. The rack

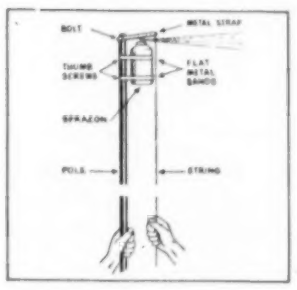


mounts at the end of a conveyor, or several, leading from production. Its wheel sections are set on a slight angle so packages placed in it will move to the delivery side where they are taken out and placed on a conveyor leading to shipping. The maker, Rapids-Standard Co., 342 Rapistan Bldg., Grand Rapids 2, Mich., tells about it in Field Report 47.

If you write maker identify as IEN - 8943

Silent paging is one of the anticipated uses for industrial television. Here is the way it works. Names of wanted individuals are printed on cards and posted on a bulletin board at a central station. A television camera, focused on the board, carries the names by wire connection to any number of remote television receivers. When a paged individual sees his name and answers the call, his card is removed from the board. Radio Corporation of America, Victor Div., 1941 Front and Cooper St., Camden 2, N. J., demonstrated its equipment for this purpose at a recent exposition in Chicago.

If you write maker identify as IEN - 8944



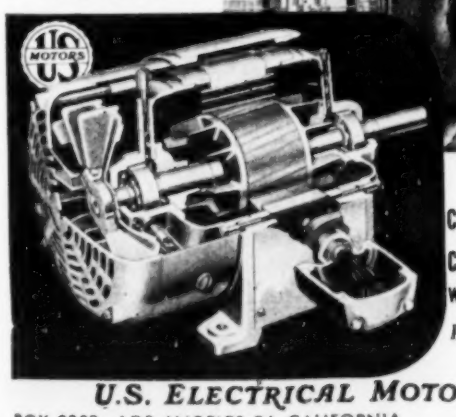
No need to climb into dangerous locations, to dress overhead belts, if you make a little contraption like the one sketched here. It employs a pressurized container of the Sprazon liquid dressing made by Graton and Knight Company, 324 Franklin St., Worcester 4, Mass.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8945

U.S. TOTALLY-ENCLOSED Explosion-Proof MOTORS

SAFE *for dangerous damp and dusty locations*

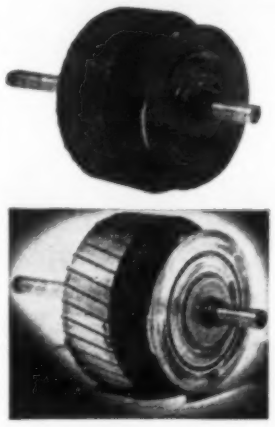


Class I—Group D
Class II—Groups F-G
with or without fan
Request Bulletin

U.S. ELECTRICAL MOTORS, Inc.
BOX 2058, LOS ANGELES 54, CALIFORNIA MILFORD, CONN.

If you write maker identify as IEN - 8946

CLEANS ELECTRIC MOTORS
WITHOUT DISASSEMBLY . . .
REMOVES DIRT and GREASE WITH FILM-FREE RESULTS



Brulin Solvent Degreaser is harmless to rubber, and because it is a non-conductor of electricity, motors may be cleaned by immersion and by running while immersed. Dirt and grease are removed with no film deposited. Periodic maintenance of motors by cleaning prevents build-up of "varnishes" common in electric motors. Non-toxic and relatively non-inflammable. Ideal for maintenance of motors used in air-conditioning and circulatory systems where air flow deposits dirt and dust due to magnetic attraction.

Write today for more complete information

BRULIN Solvent Degreaser

BRULIN & COMPANY, INC.
2938 COLUMBIA AVENUE • INDIANAPOLIS 7, INDIANA

If you write maker identify as IEN - 8947

The Simplest — Most Convenient Way to Run D-C Motors from A-C Lines
the Variac Motor Speed Control

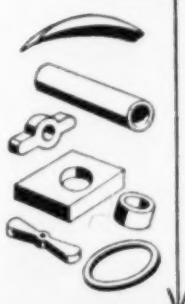
★ Extra Fast Start-Stop-Reverse
★ Speed Ranges 5-10 rpm to 15% Above Rated
★ No Electronic Rectifiers—No Warm-Up Time—Always Ready for Instant Operation
★ No Jumpiness Even at Lowest Speeds
★ High Starting Torque
★ Regulation Good
★ Simple Installation—at or ON Machine if Desired
★ Easy Maintenance
★ Low First- and Operating-Cost

4 MODELS from 1/15 hp or less to 3/4 hp D-C Motors
Write for VARIAC Speed Control Bulletin

GENERAL RADIO Company 275 Massachusetts Ave. Cambridge 39, Mass.
90 West St. NEW YORK 6 920 South Michigan Ave. CHICAGO 5
1000 North Seward St. LOS ANGELES 38

If you write maker identify as IEN - 8948

Mass-Produced
Keystone
Stainless Steel
POWDER METAL PARTS
-at low cost!



Fast, low-cost tooling and high production rates on parts of *stainless steel*—high dimensional accuracy and fine finish without machining—by one of America's largest powder metal fabricators!

Let us quote on your needs—send sketch and performance data, with quantity desired, for prompt estimates.

Write for design information and consultation, if desired.

Keystone CARBON COMPANY
Powder Metal Division
ST. MARYS, PA.

If you write maker identify as IEN - 8949

PRECISION BORING WITH MAXWELL MASTUR TOOLS

• Adjustable to 0.0002-inch, the new improved MASTUR boring tools feature precision, speed and long service life. New body and block construction permits these tools to take heavier cuts at higher speeds — to do more work in less time.

Adjusting-screw head is graduated into 50 divisions to provide readings in thousandths, and body is graduated to permit vernier readings of 0.0002-inch. The three models available have maximum boring bar capacities of 1/2, 3/4 and 1-inch and boring range from 3/8 to 15 inches.

Write for catalog. 987-MC

THE MAXWELL COMPANY
391 Broadway • Bedford, Ohio

If you write maker identify as IEN - 8950

Engineered TO YOUR NEEDS!

Phillips
MOTORIZED TRANSFER CARS

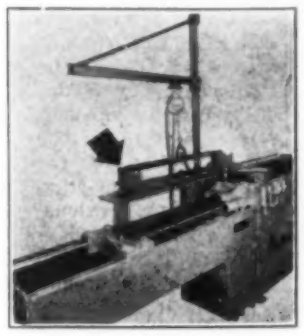
With capacities starting at 15 tons, Phillips Motorized Transfer Cars are engineered and constructed to your specific requirements. Thoroughly proved economical in service, these cars operate on AC or DC current, either from an external power source or from integral batteries or a gas-electric unit. These cars may be supplied with remote or dead-man control . . . with magnetic or hydraulic brakes . . . plus other features to fulfill your needs. *Write for Bulletin E-51.*

PHILLIPS MINE AND MILL SUPPLY COMPANY
2300 JANE STREET
PITTSBURGH 3, PA.
Manufacturers for 90 Years

IDEAS FOR YOU — Continued

If you write maker identify as IEN - 8952

Broaching operations, requiring the use of several broaches, one after the other, are assisted by a new traveling rack. It mounts on the horizontal machine and is connected to move with the ram so it is immediately above the broach when a cut has been completed. It is lifted into the rack, using a crane if it is heavy to handle. This crane also travels with the rack. The ram returns to loading position, the rack following it, and the next broach will be in position to place by hand or with the crane. Colonial Broach Co., P. O. Box 37-A, Harper Station, Detroit 13, Mich., is responsible for this new labor saver.



If you write maker identify as IEN - 8953

Only $615,000, plus shipping charges, will buy you a press and associated equipment capable of turning out a continuous panel 48 in. in width, 3/16 to 3/4 in. in thickness, made of wood waste and resins, at the rate of 30,000,000 square feet per year. Three men can operate it. The resulting product can be sawed, bent, nailed, glued, drilled with wood working tools. It will not warp, has good structural strength and an attractive wood chip surface. It weighs about the same as the wood from which it is made. The 3/16-in. thickness costs about 3 cents per square foot. An illustrated 24-page booklet explains the equipment, the process and the product. Aries Fiberboard Corp., 400 Madison Ave., New York 17, N. Y.

If you write maker identify as IEN - 8954

There's a place to put down your cigarette in a toilet stall when the stall is equipped with a new lock by Electric-Aire Engineering Co., 207-11 W. Jackson Blvd., Chicago 6, Ill. You press a button on top of the box-like lock to secure the door. The action drops a hinged shelf to horizontal position on the lock housing. You set your cigarette down upon it. When you are ready to leave you tip the shelf back to vertical to unlock the door. This action deposits the cigarette butt in the lock compartment where it can do no damage. The janitor uses a key at intervals to remove the box and clean it out. Trade name is Cee-Loc.

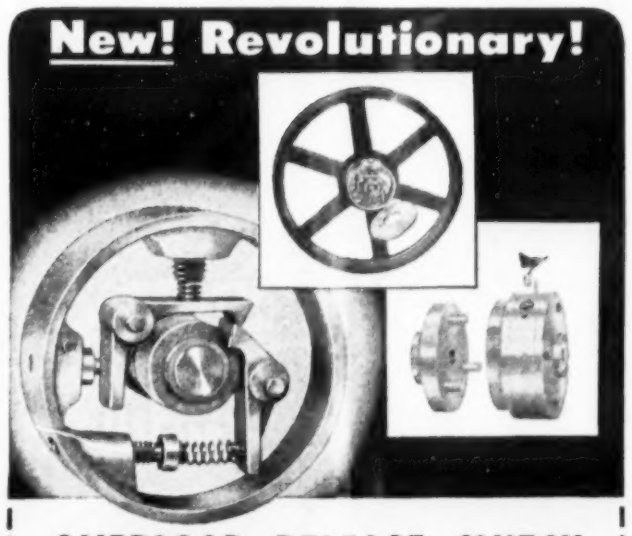
If you write maker identify as IEN - 8955

We quote an offer by Micro Switch Division, 30 E. Spring St., Freeport, Ill. that can win you a Honeywell electric clock thermostat for not more than five minutes of effort on your part — "Send your idea of the use of a snap-action switch to attention of Mike the Switch Man. If it is one of the five selected for the next issue of Micro Tips you will receive the thermostat." Ask Micro for a copy of Micro Tips and the contest form to get started.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8956

New! Revolutionary!



OVERLOAD RELEASE CLUTCH
WORKS *Instantaneously!*

• Instantaneous trigger action
• Works consistently within very close limits
• Your machine will resume operation at exact cycle point of release
• A safety device of universal, industrial application, easily installed on sprocket, chain, belt or gear drives
• Can be used over a wide range of speeds and shaft sizes

Special prices on clutches to O.E.M. users. Catalog on Request.

Overload Release Clutch Co., Inc. 1164 Stuyvesant Ave. Irvington, N. J.

If you write maker identify as IEN - 8957

M&M air fluff paper shredder

The Air-Fluff Paper Shredder is used for the commercial manufacture of paper excelsior. Also speedily, safely and efficiently destroys blueprints, letters and confidential records. Built in 3 sizes ranging in capacity from 200 to 2500 pounds per hour. Each machine can be adjusted to cut widths of 1/8", 3/16", 1/4", or 3/8". Write for descriptive literature.

mitts & merrill
1014 South Water • SAGINAW, MICHIGAN

If you write maker identify as IEN - 8958

Clow for CAST IRON PIPE
EXPANSION OR REPLACEMENT IN PLANTS . . . NEW BUILDINGS

Plain or Threaded Ends

Integral Calking Hubs

Leading engineering firms specify Clow "IPS"* Cast Iron Pipe for downspouts, waste and vent lines because of its corrosion-proof qualities.

"IPS" Pipe permits speedy installation with minimum disruption of work. It can be cut and threaded with ordinary tools of the piping trade.

Either plain or threaded ends: 18 foot lengths, sizes 3, 4, 5, 6, 8 and 10 inches . . . *Or* with integral calking hub, other end plain: 18 foot lengths, sizes 4, 6 and 8 inches.

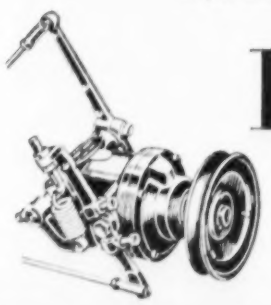
* "IPS" means Iron Pipe Size, having the same outside diameter as steel or G. W. I. pipe.

Write for Form 4-26-50.

JAMES B. CLOW & SONS
201-299 North Talman Avenue Chicago 80, Illinois

WHOLESALE DISTRIBUTORS OF PIPE, VALVES AND FITTINGS FOR INDUSTRIAL USE

If you write maker identify as IEN - 8959



now
ONE GOVERNOR MODEL . . .
for 9 out of 10 industrial and farm engines

PIERCE LONG RANGE UNIVERSAL GOVERNOR

• Instant variable speed selection and accurate engine control at any speed setting within 1200 to 2600 RPM. Higher and lower ranges obtainable by simple change of pulley. Also "constant speed" operation.

• Accurate, dependable speed control for engines operating corn shellers, drag lines, hoists, arc welders, trucks and tractors with power take-offs, etc.

Write for Complete Information
DEALERSHIPS AVAILABLE

List Price $39.50 Pulley extra

THE PIERCE GOVERNOR COMPANY, INC.
1636 Ohio Avenue, Box 1000, Anderson, Indiana, U. S. A.
WORLD'S MOST EXPERIENCED GOVERNOR MANUFACTURER

If you write maker identify as IEN - 8960

Softens the hardest paint brush!

CABOT'S BRUSH CLEANER

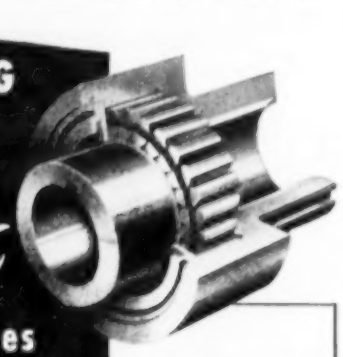
Cabot's Brush Cleaner leaves bristles soft and flexible. Keeps new brushes in A-1 condition . . . returns old brushes to useful service. Cabot's Brush Cleaner works, cleans, right down to the heel . . . won't harm fine bristles or settings. Non-inflammable. Economical too, can be used over and over again.

SAMUEL CABOT INC.
833 Oliver Bldg., Boston 9, Mass.

WRITE TODAY FOR FREE SAMPLE
See for yourself how Cabot's Brush Cleaner will restore your costly brushes.

If you write maker identify as IEN - 8961

FORMSPRAG CLUTCHES Are *Full Complement* Clutches



OVER-RUNNING
INDEXING (Feeding)
BACKSTOPPING

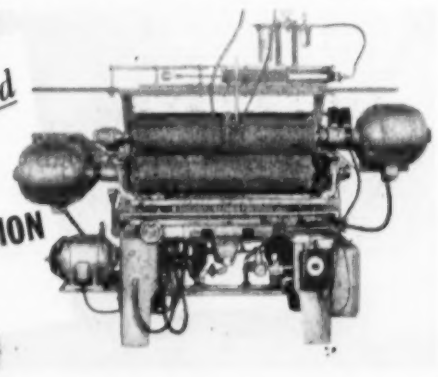
A FULL COMPLEMENT OF SPRAGS—between two races—provides an infinite number of gripping positions. This, along with Formsprag's internal simplicity, means: INSTANTANEOUS, ACCURATE OPERATION with no *backlash* . . . LONG LIFE because of changing contact points . . . MAXIMUM TORQUE CAPACITY for size and weight.

Before you specify another clutch, be sure to read this 10-page folder of technical engineering data. Just write to Formsprag — on your letterhead, please.

FORMSPRAG Company
23591 HOOVER ROAD
VAN DYKE, MICHIGAN

If you write maker identify as IEN - 8962

Engineered TO YOUR PRODUCTION NEEDS



CLAIR SURFACE FINISHING MACHINES

For Surface Finishing:
screw drivers, chisels, pliers, saws, wrenches, compacts, cigarette cases, fine silver, surgical instruments, fan blades, flat iron sole plates, many other similar items

Working closely with your engineers we will develop a custom machine designed for maximum surface finishing efficiency on your particular application. Totally enclosed, abrasion-proof hydraulic circuits assure uninterrupted production and vastly reduced maintenance costs.

CLAIR MANUFACTURING CO., INC.
Specialized Machine Equipment For Glazing and Polishing Operations
OLEAN, N. Y.

If you write maker identify as IEN - 8963

ELEVATOR . . Crane truck rides operators on level platforms

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.

No ladders needed

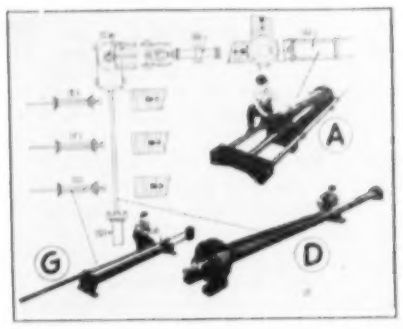
One or two men can be lifted into elevated working position by this new Tey Hydro Sky-Lift equipment. It represents further development of the platform supporting crane truck, previously described IEN-9167-52. It can lift 500 lb. from the ground and hold it at any point in the upper half of a circle 26 ft. in radius. It also can be swung around its supporting boom through 360 degrees. Height above the ground is 34 ft. counting the supporting truck.

Two working platforms, in enclosed design, are secured at the end of the boom. Controls to operate the boom are located at one of them. The platforms ride level for any position of the boom. The truck is equipped with outriggers to mount the unit in stable position at a working location.

If you write maker identify as IEN - 8964

CYLINDERS . . Air and hydraulic, to order for specified applications

Source: LINDBERG ENGINEERING CO.
2456 W. Hubbard St., Chicago 12, Ill.



Bulletins 701 and 731

Illustrated are three new examples of the company's special pneumatic and hydraulic cylinders in connection with coil handling operations in a steel mill. Pneumatic cylinder A has a 16-in. bore and 72 in. stroke. It is employed to push coils of steel to a power driven conveyor. After the coil has been turned over and loaded on a dolly, hydraulic cylinder D pulls the dolly to unloading position at one or another of three conveyors. This cylinder operates on 2,000-lb. pressure. It has an 8-in. bore and 288-in. stroke. Unloading is by three hydraulic cylinders, as at G. They also operate on 2,000-lb. pressure. They have 5-in. bore and 96-in. stroke. Each cylinder is a special design for its intended service.

If you write maker identify as IEN - 8965

New terminal nut in the Speed Nut line, by Tinnerman Products Incorporated, Box 6688-A, Dept. 14, Cleveland 1, Ohio, saved $11,500 on a Glenn L. Martin contract. The nut is used with a coarse thread screw to attach and ground an electronic tube socket. Four fastening pieces were replaced. Tinnerman will give you details.

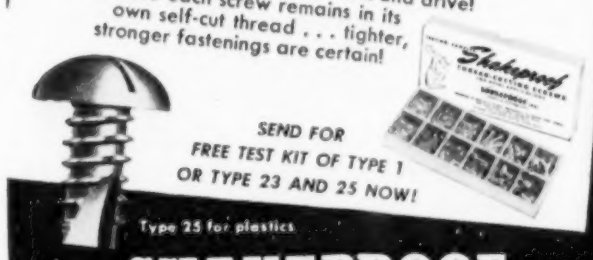
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8966

Type 1 for steel
Type 23 for die castings

FREE!
TEST OFFER PROVES
NO TAPPING WITH
SHAKEPROOF
T. M. REG. U. S. PAT. OFF.
THREAD-CUTTING SCREWS

They actually cut their own mating thread in metal or plastic . . . just drill and drive! Because each screw remains in its own self-cut thread . . . tighter, stronger fastenings are certain!



SEND FOR FREE TEST KIT OF TYPE 1 OR TYPE 23 AND 25 NOW!

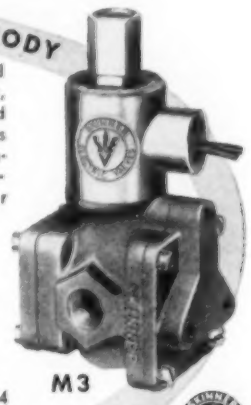
Type 25 for plastics

SHAKEPROOF
"Fastening Headquarters"
DIVISION OF ILLINOIS TOOL WORKS
St. Charles Road, Elgin, Illinois
Offices in principal cities

If you write maker identify as IEN - 8967

SKINNER Solenoid Valves *for* air & hydraulic cylinders
fluid shut-off
diaphragm operated equipment
coolant control

BRONZE BODY



"M" SERIES pilot-operated Skinner Valves have extremely fast action, and large capacity on air, inert gas and liquid applications. All internal metal parts are stainless steel or brass. Soft seals prevent leakage — operate in any position — rubber coated, nylon fabric diaphragm for long life — port size ½" or ⅜", orifice ⅜" — power consumption, 10 watts — continuous duty.

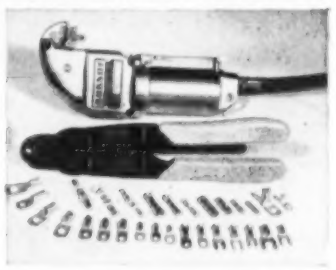
M2 is two-way, normally closed, 5 to 150 p. s. i., weight 3 lbs. **M3** is three-way, normally closed, normally open, or directional flow, 20 to 150 p.s.i., weight 3¾ lbs.

Write for Bulletins No. 493 & 494

***Skinner* ELECTRIC VALVE DIV.**
THE SKINNER CHUCK COMPANY
110 Edgewood Avenue, New Britain, Connecticut

If you write maker identify as IEN - 8968

COMPRESSION TERMINALS and LINKS



All types, all sizes quickly, easily installed with wide variety of matched tooling

All sizes of solderless lugs and links for all conductors and all applications in manufacturing and plant wiring can be rapidly, economically installed by means of Burndy tooling, coordinated with specific manufacturing methods and production requirements.

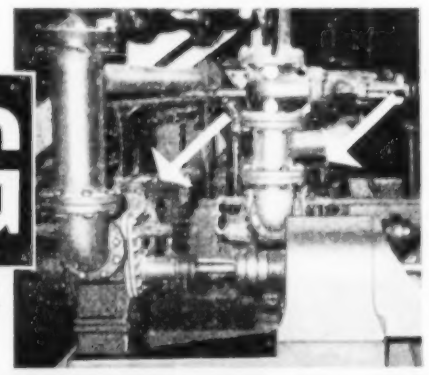
Burndy Hylugs and Hylinks are of one-piece, pure copper construction, so they can be indented on any side of the barrel and they can't split. There are no intermediate contact surfaces — current is carried by the entire cross-section. Plated to resist corrosion. Listed by Underwriters' for #22 through 2000 Mcm.

Intimate high-pressure contact between conductor and connector is assured by Burndy matched installation tools. Manual, hydraulic, and pneumatic tools are designed for portable, on-the-job use and for production bench operation.

For complete details and catalogs, write
Dept. H, BURNDY, Norwalk, Connect.

If you write maker identify as IEN - 8989

BIG SUGAR MILL . . . uses KINNEY pumps



Kinney Model SD Rotating Plunger Pumps handle 1st and 2nd molasses at giant Dominican sugar mill CENTRAL RIO HAINA — perhaps the largest mill in the Americas. Here's what they gain by using Kinney SD Pumps:

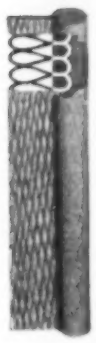
1. **Positive displacement pumping of meter-like dependability.**
2. **Low-maintenance operation insured by conservative rating of shafts, bearings, and other moving parts.**
3. **Efficient handling of viscous materials due to unique rotating plunger design.**
4. **The right pump for the job —insured by Kinney's wide range of models and sizes.**

Kinney Manufacturing Co., 3564 Washington St., Boston 30, Mass. — manufacturers of liquid and vacuum pumps. Representatives throughout the United States and in foreign countries. Send for Bulletin L-51 describing the complete line of Kinney Liquid Pumps.

Kinney

If you write maker identify as IEN - 8970

Can our product help you improve your product?



This is **INNER-SEAL.** It's extremely durable, extremely effective . . . with many features that eliminate sealing problems in the manufacturing of countless products.

Inner-Seal's bead is of *live sponge rubber* which compresses under pressure, then springs back into shape. Its flange is of *woven spring wire,* tough but flexible enough to fit snugly around corners. Its coating is of *waterproof neoprene* . . . designed for sub-zero or tropical temperatures, sunlight, humidity, grease, oil or abrasion. Available in various dimensions. Standard Inner-Seal in many colors . . . heavy-duty "dumb-bell" type in black . . . special types can be made to order.

Although Inner-Seal is most widely known in the refrigeration, railway, shipping and automotive fields, it's continually finding many new applications. Maybe *you* have one . . . maybe we can help!

FREE SAMPLES and complete information. *Write today.*

Bridgeport INNER-SEAL Live Rubber WEATHER STRIPPING

BRIDGEPORT FABRICS, INC., BRIDGEPORT 1, CONN.

If you write maker identify as IEN - 8971

Now you can BE SURE when you *buy ventilators*

The Breidert Air-X-Hauster gives you *certified capacity ratings* based on directional wind tests. Ventilator capacity ratings usually are based on horizontal wind tests only. In actual use ventilators must perform with winds blowing at ANY angle. Capacity ratings of most ventilators are not certified. Performance does not equal ratings claimed in some cases.

The Breidert Air-X-Hauster is the first ventilator to be tested by a nationally known independent testing laboratory* under variable wind conditions, and to have certified ratings published. Thousands of large and small industrial users have found that Breidert Air-X-Hausters perform as claimed in every respect.

*By Pittsburgh Testing Laboratories

For tested and certified performance you can depend on the

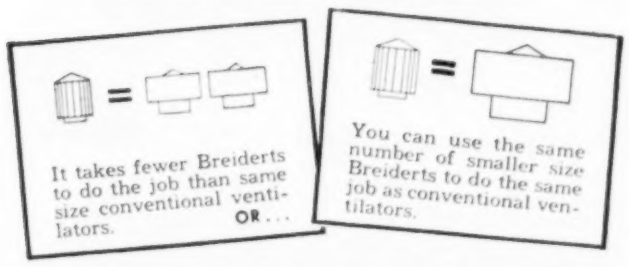
PAT. NO. 2269428

Breidert Air-X-Hausters

Breidert Air-X-Hausters provide safe, sure ventilation no matter which way the wind blows (barring interior negative pressures).

Stationary, down-draft proof, no moving parts, nothing to jam or get out of order. It is not necessary to cover Breidert Air-X-Hausters with tarpaulin or bags to keep out rain or snow.

THE BREIDERT AIR-X-HAUSTER DELIVERS BETTER ALL-AROUND RESULTS



GET ALL THE FACTS! Write today for complete Engineering Data Book, including certified capacity ratings. Address Dept. C.

THE G. C. BREIDERT Co.

3129 SAN FERNANDO ROAD, LOS ANGELES 65, CALIFORNIA

REPRESENTATIVES IN PRINCIPAL CITIES THROUGHOUT THE UNITED STATES

If you write maker identify as IEN - 8973

MARKING . . Self-adhesive tape, transparent plastic over colored back

Source: LABELON TAPE CO.
448-52 Atlantic Ave., Rochester 9, N. Y.

Label length 1.6 inches

Smudge proof marking for storage files, folders, drawers, binders, baskets, transfer cases, stock bins, tool cribs, samples, repair items, are typical uses for the company's plastic labeling tape. It is now available in a new padded form. Each sheet is paper backed so it can be applied in a typewriter, as well as written upon, prior to stripping the paper for self-adhering application.

The padded sheets measure about 3¼ by 11 inches. Six individual label heights on each sheet are between 5/16 and 1½ inches. One line can be typed on the 5/16-in. height and five on the 1½-in. height. Narrow borders separate the individual units, in a choice of red, blue, green, black, for good contrast against various backgrounds.

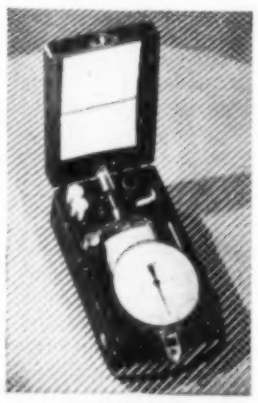
Two layers of acetate plastic are bonded together with a white waxy substance laminated between them, as in the previous design of this tape. Until now it has been available only in roll form. The rear layer, which is contacted on a surface to be identified, is coated with a neoprene adhesive that adheres upon contact to glass, plastics, wood, metal.

Writing, printing or typing pressure on the outer transparent face destroys the wax, exposes the bottom opaque colored face to produce a black line wherever marking pressure has been applied. The marking cannot be erased and will not smudge because it is beneath the cover plastic. It is not affected in a temperature range between minus 40 and plus 160 deg. F. in service. Tablet assemblies list at $1.25.

If you write maker identify as IEN - 8974

TACHOMETER . . Centrifugal design, to 48,000 rpm., overspeed protected

Source: HERMAN STICHT & CO.
24 Murray St., New York 7, N. Y.



Bulletin 751

Slip coupling protects this new Type-UO tachometer against overspeeding so it is not possible to damage the mechanism by applying it in a range for which it has not been set. Four models in the line have overall range minimum at 30 to 12,000 rpm., maximum at 120 to 48,000 rpm. Each can be set in any of five intermediate ranges.

Direct readings are made on the dial. Speed fluctuations can be observed and followed. The instrument operates in either direction of rotation and can be applied in any position. It is non-magnetic. Packaging is in a carrying case with a set of accessories, including a wheel tip to read feet per minute.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8975

WRITE YOUR OWN TICKET FOR

Quality Wire!

SPECIFY SENECA FOR WIDE RANGE OF USES

- ☐ Aircraft
- ☐ Armature
- ☐ Cable
- ☐ Car Seal
- ☐ Cotter Pin
- ☐ Curtain Spring
- ☐ Flexible Shaft
- ☐ Glass Netting
- ☐ Hair Pin
- ☐ Lock Spring
- ☐ Piston Ring
- ☐ Plow Steel
- ☐ Ring Traveler
- ☐ Rope
- ☐ Spark Coil Core
- ☐ Spring
- ☐ Stapling
- ☐ Stitching
- ☐ Weaving

Whatever your needs in wire . . . specify SENECA for *top quality* and *uniformity!* High or low carbon steel wire . . . aluminum . . . bronze. Sizes No. 40 W & M (.007) and larger . . . round, half round, oval, square, flat, straightened and cut. Finishes—bright, soft annealed, coppered, liquor, tinned, bright galvanized, oil tempered, enameled. Write about your requirements.

SENECA WIRE & MANUFACTURING COMPANY, FOSTORIA, OHIO

Representatives in practically All Principal Cities

If you write maker identify as IEN - 8976

WANT A TABLE GUMMER GLUE THAT REALLY WORKS?

Paisley research has developed three *brand new* Table Gummer Glues...

1. TABLE GUMMER *BOTTLE LABEL* GLUE
2. TABLE GUMMER *TIN CONTAINER* GLUE
3. TABLE GUMMER *SHIPPING LABEL* GLUE

Each of these fine new adhesives possesses distinctive characteristics. Each one is specially designed for the job it has to do. No *one* all-purpose Table Gummer Glue can work with the same speed and efficiency on tin, glass, paper and other packaging materials. Now, with the right kind of PAISLEY Table Gummer Glue, labeling operations of this type can be performed with greater speed and efficiency. Labels *stay put* . . no shifting or falling off. Loose, torn edges, and spotty gumming are eliminated. Order a trial shipment TODAY, or send for free Adhesive Operation Data Sheet.

Paisley SCIENTIFIC ADHESIVE SERVICE

PAISLEY PRODUCTS INCORPORATED

Manufacturers of Glues, Pastes, Resin Adhesives, Cements and Related Chemical Products

1770 CANALPORT AVE., CHICAGO 16, ILL. ★ 630 W. 51st STREET, NEW YORK 19, N. Y.

If you write maker identify as IEN - 8977

For Precision Flatness and Finish... on Metals, Ceramics, Quartz and Plastics...

USE A CRANE LAPMASTER

With a Lapmaster you can lap different parts in one cycle—lap a wide range of parts of different materials in short or moderate production—lap identical parts at tremendous production rates and maintain flatness to one light band (.0000116"), surface finish to 2 or 3 RMS. *Production lapping may be the solution to your problem. Get all the facts.*

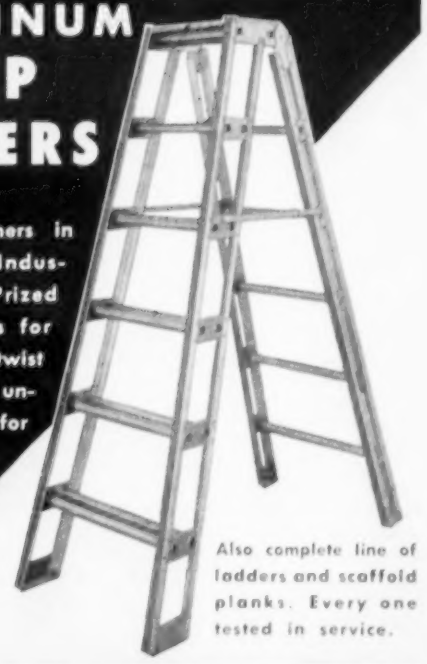
Full facts on Lapmaster production lapping—Flatness interpretations available in two illustrated booklets. They are yours for the asking.

JOHN CRANE **CRANE PACKING COMPANY**
LAPMASTER DIVISION
1815 CUYLER AVENUE • CHICAGO 13, ILLINOIS

If you write maker identify as IEN - 8978

HEAVY DUTY ALUMINUM STEP LADDERS

Proven performers in all types of industrial plants. Prized by Contractors for resistance to twist or wobble. An unexcelled value for heavy service.



Also complete line of ladders and scaffold planks. Every one tested in service.

LOUISVILLE LADDER COMPANY
1101 W. Oak St. — Dept. BA — Louisville 10, Ky.

If you write maker identify as IEN - 8979

AA-267

IF you sell your products in rolls (like adhesive tape), or—if you use rolls in production (like printing or coating) then—**better rolls can build your profits** by reducing waste, by increasing production and by improving your products. Get the facts on Camachine roll slitters and rewinders, the **right** model for every material. Write today to

CAMERON MACHINE COMPANY
61 Poplar Street • Brooklyn 1, N. Y.

Camachine Commander High Speed Slitter Rewinder

Camachines

If you write maker identify as IEN - 8980

Veteran users of wire rope know the money-saving advantages of Electroline fittings:

- **Prolongs Rope Life**—damp vibration stresses and overcomes rope fatigue at fitting entrance, where rope usually wears.
- **Safety**—no need for heat, solvent or acid, no hazard for men.
- **Easy Application**—ordinary labor can make the connection.
- **Strength**—stronger than the rope it is attached to.

Electroline Company
4121 South La Salle Street
CHICAGO 9, ILLINOIS
In Canada: Powerlite Devices, Ltd., Toronto

Send for the Electroline catalog —32 pages, illustrated, pocket size; full of useful information.

If you write maker identify as IEN - 8981

Revolving turntable allows the operator to work all around the casting without stop for re-positioning . . . an addition to the standard Wolverine rectangular benches — Provides: • Better dust collection due to higher velocity. • New design, permitting exhaust outdoors where required, or return to room if desired. • Standard velocity, 300 feet per minute, and, if application requires, higher velocities available up to 800 feet per minute. • Ideal system for collecting dust from grinding, polishing and sanding operations.

Heavy duty industrial viscous filters in rear compartment remove dust from air stream and axial flow fan in top of rear compartment discharges vertically back into the room or outdoors if required.

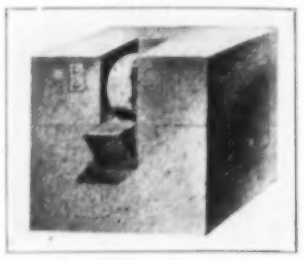
Write for descriptive bulletin, Dept. D

WOLVERINE EQUIPMENT CO.
31 MAIN ST., CAMBRIDGE 42, MASS.

If you write maker identify as IEN - 8982

HEATING . . Induction equipment to preheat dies for extruding work

Source: MAGNETHERMIC CORPORATION
3988-92 Simon Road, Youngstown 7, Ohio



Heats inside first

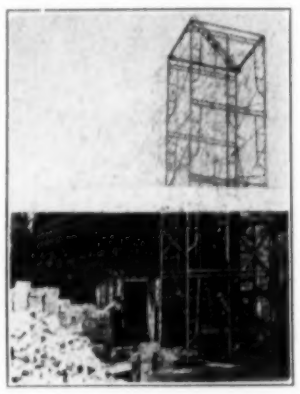
Extruding dies and their backers are positioned in the central work recess in this new 60-cycle induction machine. The heating circuit is closed by pressing a button. A timer takes over to open the circuit after a predetermined interval sufficient to bring the die and the backer up to correct temperature for operation in an extruding machine. The new heater rates 15 kw. It will take a die and its backer measuring 3¼ to 5 in. in thickness and from 5 to 14 in. in diameter.

Each assembly is built for a specified diameter within this range or can be supplied to operate on different thicknesses in connection with an auxiliary plug. The work recess is open at the top for loading and unloading. The heating interval ranges from 5 to 15 minutes. Overall dimensions are 42 by 14 by 30 inches. Weight is about 650 pounds. A characteristic of the heating action is that it is from the inside of the work outward to assure thorough preheat.

If you write maker identify as IEN - 8983

ELEVATOR . . Scaffold assembly for loads to 2 ton, height to 100 feet

Source: BIL-JAX INC.
102 Wyse Road, Archbold, Ohio



Standard sections

New combination of the company's standard scaffold sections is available with a top frame section, sheave head, base section, side panels, braces and platform frame to make an elevator to 100 ft. in height. The user can provide or specify the power unit, wire rope, guides, gates, cages and brakes. The equipment is suited particularly for construction purposes. It can be put up and taken down quickly.

If you write maker identify as IEN - 8984

While you talk, and listen, you can have a complete record of both sides of a conversation, if you possess a Cub Corder and turn it on to its storage battery power source. This new magnetic tape recorder weighs 13 pounds with the battery. It holds sufficient tape for an hour of steady operation on each of the two tape faces. It is made by Ectro Incorporated, 553 Industrial Ave., Delaware, Ohio. The battery can be recharged direct, after several hundred hours of operation, by plugging into the battery circuit in your automobile or through a rectifier to a 110-volt ac. line. You can listen to the recording or play it back or erase it and record again.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

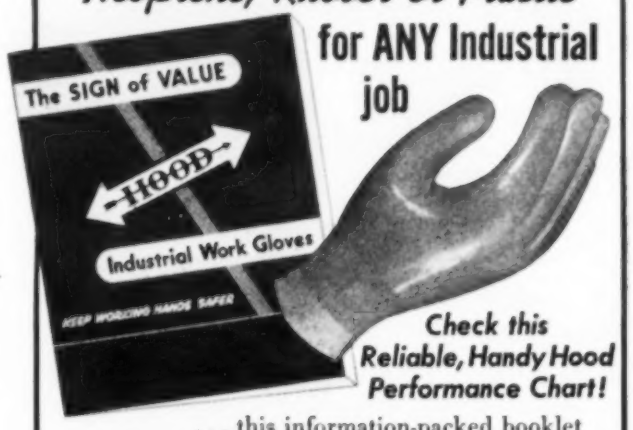
If you write maker identify as IEN - 8985

HERMAN H. STICHT CO., INC. 27 PARK PLACE, NEW YORK 7, N. Y.

If you write maker identify as IEN - 8986

FREE *Send for your copy today*

Helps you choose the RIGHT Hood Glove—
Neoprene, Rubber or Plastic
for ANY Industrial job



Check this Reliable, Handy Hood Performance Chart!

. . . this information-packed booklet shows comparative wear and chemical resistance of Hood Neoprene, Rubber and Plastic Coated Gloves, and contains illustrations and full descriptions of the complete line of Hood Industrial Gloves—top choice for *every* job in *any* industry.

HOOD RUBBER CO.
Watertown, Mass.

If you write maker identify as IEN - 8987

BSFL CENTRIFUGAL PUMPS **Built to TAKE IT!**

. . . in tough service

Ingersoll-Rand Class BSFL pumps take tough process service in their stride. For they are built to stand up under the most severe conditions. Proper material selection, carefully engineered design and the best stuffing-box arrangement—using either the Cameron Shaft-Seal or packing, insure dependable operation and sustained high efficiency.

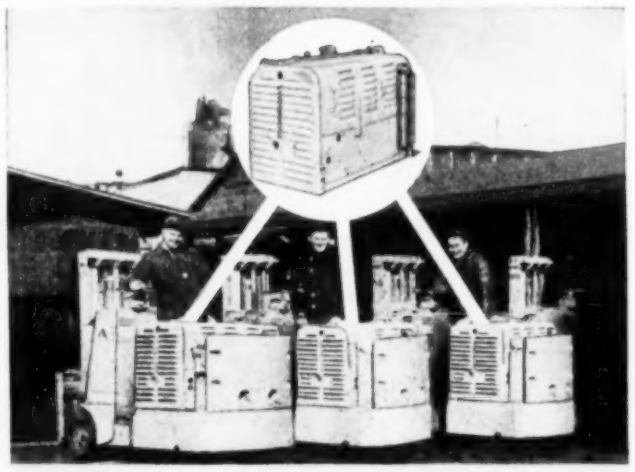
Ask your I-R representative for full details on these BSFL pumps, available for capacities to 3200 gpm and pressures to 600 psi—part of the complete Ingersoll-Rand pump line for the process industries.

Ingersoll-Rand
716-10 11 Broadway, New York 4, N. Y.

Pumps, Compressors and Vacuum Equipment for the Process Industries

If you write maker identify as IEN - 8988

Ready-Power is the Only Interchangeable Gas-Electric Power Unit



Interchangeable Ready-Power units allow the most economical system of preventive maintenance known, with *no truck downtime!* One spare power unit permits rotation of maintenance while trucks stay "on the job" . . . an important reason why Ready-Power drive moves materials at lowest cost per ton mile!

Remember . . . Your Truck Is No Better Than Its Power!

CONTINUOUS-DUTY POWER UNITS

The READY-POWER Co.
3830 Grand River Ave., Detroit 8, Michigan
Manufacturers of Gas and Diesel Engine-Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks

If you write maker identify as **IEN - 8989**

Be Sure! Let BAY STATE specialists help you select the exact abrasive product for your grinding requirements.
Ask for our "On The Job" engineering service.

BAY STATE

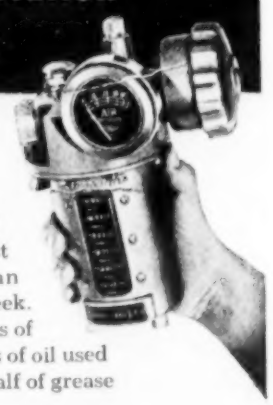
BAY STATE ABRASIVE PRODUCTS CO.
Westboro, Massachusetts, U. S. A.
Branch Offices and Warehouses:
Chicago, Cleveland, Detroit, Pittsburgh
Distributors — All Principal Cities
In Canada: Bay State Abrasive Products Co. (Canada) Ltd., Brantford, Ont.

If you write maker identify as **IEN - 8990**

Steel-Maker...
extends bearing life 11 times!

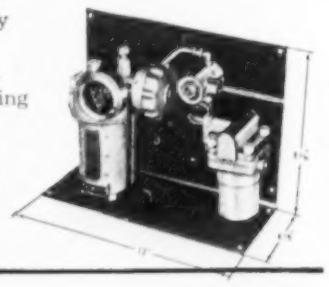
ALEMITE OIL-MIST

Saves its cost each week-
eliminates lubrication down-time



Costly High-Speed Bearings Failed Week after Week on a key production machine. Costs piled up. The company turned to Alemite—installed an Oil-Mist unit costing little more than $100. *Result:* $220 saved first week. Today—11 weeks later—no signs of bearing wear; only three ounces of oil used per shift where a pound and a half of grease were required before!

Alemite Oil-Mist is a fully automatic system which atomizes oil into mist . . . distributes it through tubing to bearings . . . applies a constant uniform oil film to groups of bearings designed either for oil or grease lubrication.



delivers oil to bearings 3 ways

1. Oil-Mist as Such. For any type of anti-friction bearing—ball, roller or needle.

2. Oil in Spray Form. For open and enclosed gears and chains. Nozzle partially condenses mist so that it can be directed onto a concentrated area.

3. Oil-Mist Condensed. For plain bearings, slides, ways, vees, cams and rollers. In these applications, condensing fittings convert oil mist to liquid oil.

Get the facts NOW!

Let us send you the complete story on Oil-Mist. Specifications, models, typical applications, actual case histories. Get yours now. Write Alemite Division of Stewart-Warner, Dept. K-83, 1850 Diversey Parkway, Chicago 14, Illinois.

If you write maker identify as **IEN - 8992**

PAINTING . . Roll type brush, lambswool or Dynel changeable cover

Source: WOOSTER BRUSH CO.
602 Madison Ave., Wooster, Ohio

No spatter

Long Boy, with a lambswool cover on a 9-in. roller, and Twin-Boy with Dynel fabric on a 7 or 9-in. roller are new painting tools for use on any surface. Both roller assemblies clamp on long or short handles and are used to apply paint picked up from a screen equipped supply tank. A kit, including the Long Boy with its cover and clamp and a 2-gal. metal paint tray and screen, lists at about $7. The Twin-Boy, with a 9-in. roller and cover and a 44-in. extension handle and clamp, lists at $3.70.

If you write maker identify as **IEN - 8993**

RUBBER . . Silicone compound molds into bushings, O-rings, packings

Source: GENERAL ELECTRIC CO.
101 Plastics Ave., Pittsfield, Mass.

Sample and data upon request

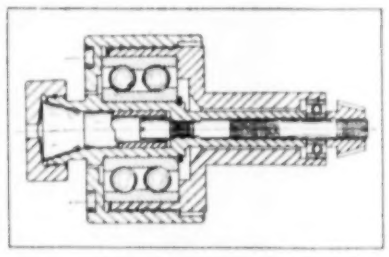
Compression set is 8 per cent after 22 hr. at 300 deg. F. for the company's new Type SE-360 silicone rubber. The new material can be converted into parts in molds originally designed for natural and synthetic rubber because of this low figure. Water absorption does not exceed 1 per cent after immersion for a week at 70 deg. C.

Molding can be carried on in a press cycle of about 15 min. at 250 deg. F. followed by a 24-hr. oven cure at 480 deg. F. to obtain the stated physical properties. The material can be used directly or employed as a base stock.

If you write maker identify as **IEN - 8994**

DRILLING . . Ball bearing head mounts in turret on a screw machine

Source: DRILL-TRU
5402-6 Alhambra Ave., Los Angeles 32, Calif.



$59 without collets

Drill capacity is from 0.004 to 0.125 in. for this new collet type ball bearing drill head. It is available in right or left hand drive for application in the turret on a single spindle automatic screw machine. Drive connection is by a standard gear shaft to a motor or an overhead belt pulley. The design eliminates the possibility of drill whip at speeds to 8,000 rpm. The head takes an instrument lathe collet such as Levin Type WW.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8995**

68% GREATER BLANK SIZE...

FREE...

Write for sample with cost summary and Bulletins 101 and 161 giving the complete Federal stamping story.

FEDERAL'S NEW SHORT RUN MULTI-PIERCE PROCESS NOW HANDLES 68% GREATER BLANK SIZE.

Any number of holes of varying diameters punched simultaneously with Federal precision.

- Any stampable material
- Saves time, labor
- Varying diameters
- Lowers piece prices
- Reduces press handling

Federal's multiple hole-punching process, by increasing the blank size, again offers the customer important savings where precision die cut stampings in short runs is involved. Before you buy . . . try Federal. Send your prints for lower cost quotations.

Federal TOOL AND MANUFACTURING CO.
3612 ALABAMA AVE. (ST. LOUIS PARK)
MINNEAPOLIS, MINNESOTA
"QUALITY STAMPINGS IN SMALL QUANTITIES"

If you write maker identify as **IEN - 8996**

UNIVERSAL DRILL BUSHINGS in a complete variety of sizes and shapes

Universal Drill Bushings are produced in a complete range of standard sizes and lengths. Prompt attention is also given to orders for special dimensions. Universal Drill Bushings are precision machined with super finish bores to reduce wear, and a blended radius to keep tool hang-up and breakage to a minimum. 100% concentricity and hardness tests insure absolute accuracy, uniform high quality, and long life. Write today for complete information.

The modern home of finer production tools 167-A

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

If you write maker identify as **IEN - 8997**

with Veelos on your machines v-belt adjustment is a production-saving job

ALL V-BELTS STRETCH. With endless v-belts there's nothing you can do to take up this stretch once the motor has been "run-out". But with Veelos the adjustment is in the belt itself—even sliding motor bases are unnecessary.

Changing the length of each Veelos v-belt by just adding or removing links is the best, most efficient, way to keep the belts correctly matched. Using Veelos means that the job of adjustment is done easily and quickly... with the least amount of machine down-time.

VEELOS THE LINK **V-BELT**

Write for your copy of the Veelos Data Book—it gives file-worthy product and engineering facts which you should have handy. We'll be glad to send you a copy.

MANHEIM MANUFACTURING AND BELTING CO.
651 Manbel Street, Manheim, Pa.

Adjustable to Any Length • Adaptable to Any Drive

If you write maker identify as **IEN - 8998**

IS RUST EATING AWAY YOUR PARTS INVENTORY?

Then you Need MARVELLUM VPI® WRAP

Paper coated with a Volatile Corrosion Inhibitor

Avoid the damages of destructive rust, the loss of time and money spent in refinishing inventory parts, the mess and bother of slushing and cleaning. Wrap your parts—or merely line your bins—with economical Marvellum VPI.

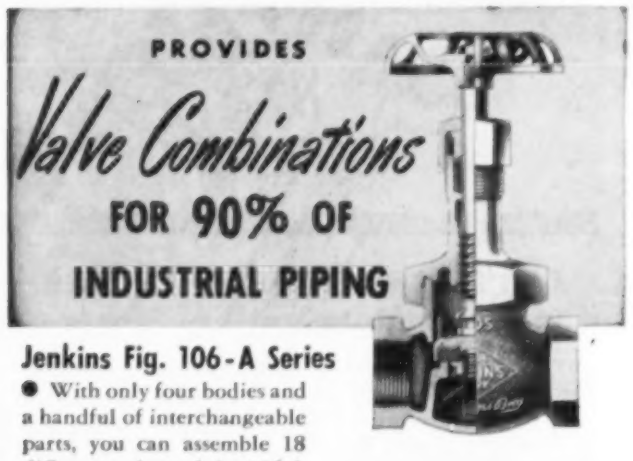
VPI is a paper coated with a new chemical which slowly vaporizes, forming an invisible protective film that prevents corrosion. Used as a wrap it keeps rust away for years. Used as a liner it gives you many months of trouble-free storage. Developed during the war as a protective wrap for shipment of steel and aluminum parts, many companies are also using it to protect their inventories or as a lining for tote boxes on the production floor.

Marvellum VPI is available in sheets, envelopes or special containers. Marvellum has complete facilities under one roof for designing, producing and coating VPI Wraps. Also makers of a wide range of other barrier materials to meet your needs for product protection. Distributors in all major cities.

Get all the facts. Write for FREE BOOKLET.

The Marvellum Company
24 APPLETON STREET HOLYOKE, MASS.
First and Foremost in VPI Protection

If you write maker identify as **IEN - 8999**



Jenkins Fig. 106-A Series

● With only four bodies and a handful of interchangeable parts, you can assemble 18 different valves of the 106-A "family". Meeting 90% of all industrial piping needs, you can understand why the 106-A Series is so justly famous. The renewable disc, fitted in the slip-on stay-on disc holder, assures drop-tight closure and lasting economy under the toughest service conditions.

NEW 12 PAGE FOLDER NOW READY, describing the many easily-assembled combinations of the 106-A "family" of Renewable Composition Disc Bronze Valves and including a Disc Guide. Ask your Jenkins Distributor for it. Jenkins Bros., 80 White St., New York 13, N. Y.

LOOK FOR THIS DIAMOND MARK

JENKINS VALVES

TYPES, SIZES, PRESSURES, METALS FOR EVERY NEED

If you write maker identify as **IEN - 9000**

Over 17,000 copies now in use!

THE RELAY DATA YOU NEED . . .

at your Fingertips!

This famous 640-page Struthers-Dunn RELAY ENGINEERING HANDBOOK answers your questions about relays—explains fundamental types—tells what types to use for specific applications—serves as a comprehensive guide to relay circuits, relay selection, application, use and maintenance. Contains over 1100 illustrations. Limp bound in convenient pocket size. Price $3 per copy.

STRUTHERS-DUNN

5,348 RELAY TYPES

• POWER • SPECIAL-PURPOSE • SMALL •
• SEQUENCE • LATCH • SENSITIVE •
• TIMERS • INSTRUMENT-CONTROLLED •

Struthers-Dunn, Inc., 150 N. 13th St., Philadelphia 7, Pa.

BALTIMORE • BOSTON • BUFFALO • CHARLOTTE • CHICAGO • CINCINNATI
CLEVELAND • DALLAS • DETROIT • KANSAS CITY • LOS ANGELES
MINNEAPOLIS • MONTREAL • NEW ORLEANS • NEW YORK • PITTSBURGH
ST. LOUIS • SAN FRANCISCO • SEATTLE • SYRACUSE • TORONTO

If you write maker identify as **IEN - 9001**

Proved In Industry

Prep-n-Cote

An Established Iron Phosphate Coating and Cleaning Product

Ordinary Solvent cleaning, (magnified 5 times) completely failed at 72 hours under salt spray fog. A.S.T.M. Spec. B-117-T-44.

Prep-n-Cote panel, (magnified 5 times) after 704 hours exposure to salt spray fog. A.S.T.M. Spec. B-117-T-44.

Prep-n-Cote can be used in Mild Steel Industrial Spray Washer Equipment

- From 2 to 6 Stages
- In Steam Gun Operation
- In Dip Tanks
- Also Acts as an Excellent Metal Cleaner
- Provides Superior Paint Bond and Corrosion resistant Properties to Metal Surfaces.

Write for Bulletin 52-116

NEILSON CHEMICAL CO.

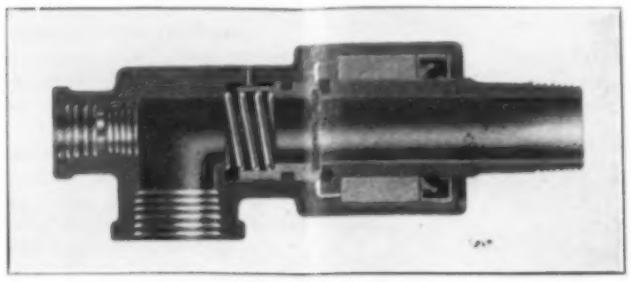
MANUFACTURERS OF METALPREP

2602 Tecumseh Rd. Windsor, Ont. — 6584 Benson St., Detroit 7, Mich. — 3411 Union Pacific Ave. Los Angeles 23, Calif.

If you write maker identify as **IEN - 9002**

PIPE FITTING . . Rotary joint for stationary to rotating connection

Source: ANCO INCORPORATED
3 Baker St., Providence 5, R. I.



Self-aligning design

Stationary body in this new rotary pressure joint is threaded at the left-hand end, and also in a side connection at this end, to take a siphon pipe and a steam inlet pipe respectively. The steam passes through a spring backed, ring sealed piston. It makes ring contact with a friction free Rulon plastic seal in the end of the rotating sleeve that extends to the right. This sleeve rides in a carbon bearing. It is mounted in the body to the left of a grease retainer that is held in place by a snap ring.

The joint is available in pipe sizes from ¼ to 5 inches. It is rated to handle steam to 350 pounds. It can be specified in ball bearing construction.

If you write maker identify as **IEN - 9003**

CLEANING . . Trailer type sweeper mounts 7 or 8 ft. cylindrical brush

Source: LITTLE GIANT PRODUCTS INC.
1528-32 N. Adams St., Peoria, Ill.

Sweeps dirt, trash, brickbats, snow

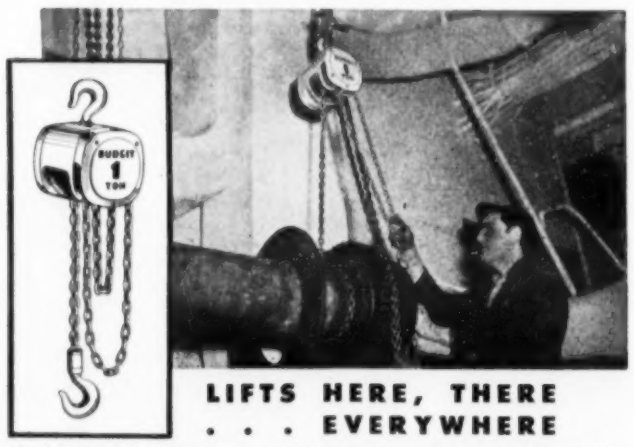
New sweeper mounts back of a tractor or motor vehicle for its forward movement. It is available in two brush drive designs, one by power takeoff from the vehicle and one by a 15-hp. gasoline engine mounted on its own frame. The brush can be set at any angle, to 30 deg., to the right or left. An 8-ft. brush will sweep a path 7 ft. in width. Forward movement is at about 8 mph. A sprinkler attachment is available for dust control in standard sweeping operations.

If you write maker identify as **IEN - 9004**

Humigraph trade names a card, measuring about 1½ by 6 inches, on which are seven ½-in. circular spots in a line down the center. The color in these spots changes from blue to lavender to pink with change in humidity in the atmosphere. A stable color appears at one end so the spots can be compared and current humidity read in per cent. Andrew Technical Service, 3803-7 N. Clark St., Chicago, Ill., will send you a sample on request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9005**



LIFTS HERE, THERE . . . EVERYWHERE

Light weight, ruggedness, and speed make the portable 'Budgit' Aluminum Chain Block tops for every imaginable spot-lifting job. It's a one-man hoist — easy to carry, hang up, and use anywhere. The ¼-ton size weighs a mere 29 lbs. A pull of only 25 pounds on the hand chain lifts the full load!

For on-the-spot hoisting service unmatched by any other chain block — choose 'Budgit.' For design, engineering, and construction features backed by over 60 years of experience in building load-handling equipment exclusively — 'Budgit' is the chain block to buy. It's available in ¼, ½, 1, and 2-ton capacities. Bulletin 398 gives full details about this powerful hoist. Write for a copy.

'Budgit'® CHAIN BLOCKS

MANNING, MAXWELL & MOORE, INC.
Muskegon, Michigan

Builders of "Shaw-Box" Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, 'American' Industrial Instruments.

If you write maker identify as **IEN - 9006**

Republic WIRETEX AIR HOSE

WIRETEX, combining the strength of steel with the flexibility of rubber, brings you economical hose performance. Republic WIRETEX Air Hose easily handles air pressures up to 2,000 psi — and is ideally suited to work on less rigorous jobs, too, where extra service life and trouble-free performance is an asset.

Republic WIRETEX is NEW — a truly modern conductor internally reinforced with high tensile wire. It's easy to handle, unbelievably tough and long lasting. What's more, Republic WIRETEX is built in 60-foot **Economy Lengths.** You save money when you buy Republic WIRETEX; time and money when you use it! Get the facts today! Republic WIRETEX Hose is available in all standard (¾" to 2" inclusive) sizes.

REPUBLIC RUBBER DIVISION

LEE RUBBER & TIRE CORPORATION, YOUNGSTOWN 1, OHIO

INDUSTRIAL RUBBER PRODUCTS

If you write maker identify as **IEN - 9007**

Quaker

CONVEYOR BELTING

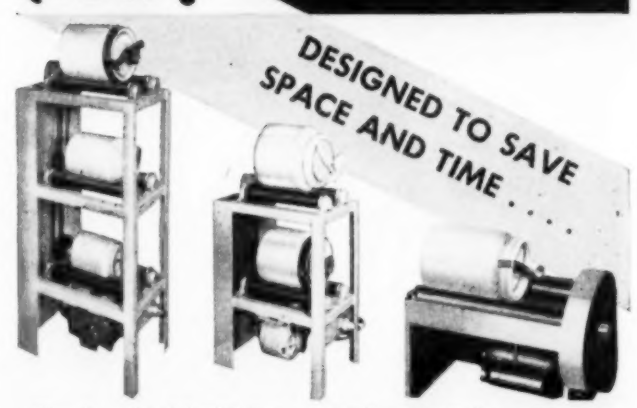
If cartons slip and slide because of the steep incline, switch to a Quaker Safety Grip Rough Top Belt for sure, fast handling. The top surface is "alive" with thousands of rubber fingers that grip and hold even the smoothest material. *Tough* fingers on a *tough-built* belt that takes heavy loads, hard shocks and rough use over a long time. Depend on Quaker—all constructions, weights, sizes, built for all specific job requirements.

Write for name of nearest distributor

QUAKER RUBBER CORPORATION
DIVISION OF H. K. PORTER COMPANY, INC.
OF PITTSBURGH
Dept. E, Philadelphia 24, Pa.
Branches in Principal Cities

If you write maker identify as **IEN - 9008**

New! JAR MILLS



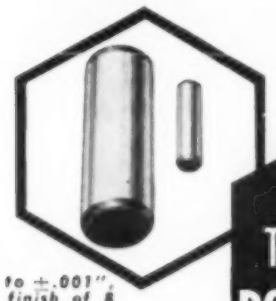
Here's a "unitized" line of "roller-type" jar mills especially designed for the busy, crowded laboratory. They are tiered to occupy a minimum of space. They feature a patented roller design that keeps jars centered — permits faster operation. The operator simply sets the jar on the rollers and starts the mill.

These mills are sturdily built with welded steel frames, heavy-duty oilite bearings, extra powerful drives. They are available in sizes to handle 1 to 12 jars of 1 pint to 3 gallon capacity. Laterally adjustable rollers permit rolling any round container from 2½"-13" dia. Variable speed drive optional on larger models.

Write for details, today!

U. S. STONEWARE CO.
PROCESS EQUIPMENT DIVISION, AKRON 9, OHIO

If you write maker identify as IEN-9009



ALLEN Tru-Ground DOWEL PINS

Accurate to ±.001", microinch finish of 8 R M S. Single shear strength from 190,000 to 210,000 p. s. i. Sizes from 1/8" to 1" diameter are standard in both .0002 or .001 oversize.

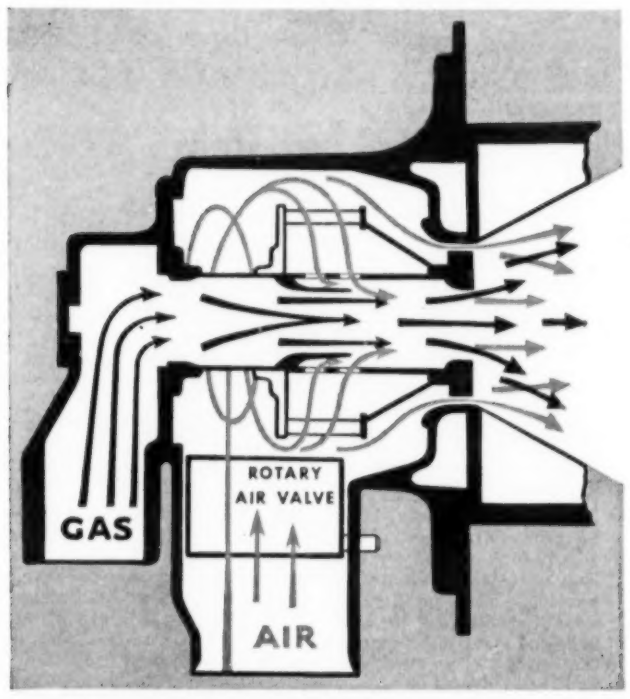
- So accurate they have been used as gauges
- So strong they have been used as bearings
- Maximum holding power against lateral thrusts

Allen Dowel Pins are ideal for economical jig and fixture work. Their extreme accuracy is maintained by scientific chart control throughout the manufacturing process.

SOLD ONLY THROUGH LEADING INDUSTRIAL DISTRIBUTORS

THE ALLEN MANUFACTURING COMPANY
Hartford 2, Connecticut, U. S. A.

If you write maker identify as IEN-9010



VORIFLOW® gas burner

. . . another cost-saving feature of

Powermaster®
PACKAGED AUTOMATIC BOILERS

- Keeps fuel cost DOWN and boiler efficiency UP.
- Infinitely variable combustion modulation responds instantly to load demands from 30% to 100% of firing capacity—*with full efficiency!*
- Immediate change-over to alternate fuels is provided with combination units.

NEW BULLETIN . . .

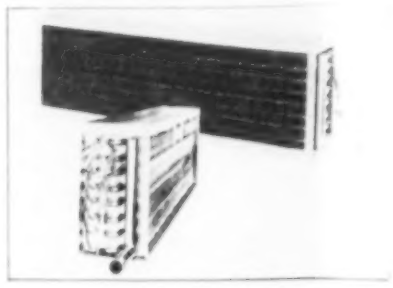
describes and illustrates *all* cost-saving features of the Powermaster. Send for a copy of Bulletin 1219 today.

ORR & SEMBOWER, INC.
860 Morgantown Road, Reading, Penna.
BUILDERS OF COST-SAVING BOILERS SINCE 1885

If you write maker identify as IEN-9012

REFRIGERATING . . Evaporator coil for direct expanded Freon 12 or 22

Source: TENNEY ENGINEERING INC.
24-28 Avenue B, Newark 5, N. J.



For air conditioning

New four-row finned coil has been standardized by the company for quick delivery in refrigerating and air conditioning equipment in domestic and commercial comfort cooling installations. The coil, Type AC4, is made in a range of sizes to match normal air conditioning loads and to fit any duct dimension. It is available in ratings from 2 to 10 ton on recommended air handling capacities between 750 and 3,750 cfm.

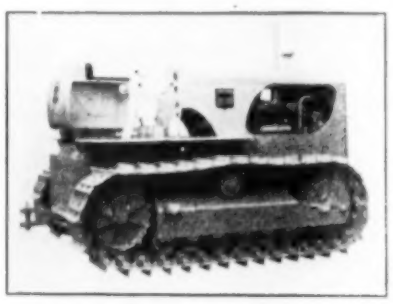
Five models include eleven sizes ranging from 1.51 to 7.50 sq. ft. of face area. **Four styles** are horizontal, left and right, and vertical, up and down, to assure counter-flow circuiting and minimum surface for superheating.

Coils are selected to balance out at 36 to 43 deg. F. suction temperature at recommended air flow rate using normal high temperature water cooled or combination air-water cooled condensing units. **Construction** is in 5/8-in. copper tube with sweat connection distributors. The company will install distributor and valve combinations to suit given conditions. Any externally equalized thermostatic expansion valve can be employed with the new coil.

If you write maker identify as IEN-9013

CONSTRUCTION . . Crawler tractor with diesel engine and air steering

Source: OLIVER CORPORATION
402 W. Madison St., Chicago 6, Ill.



Bulletin OC-18

U-shaped bar extends upward from the floor and across in front of the operator to control the clutch in this new Oliver OC-88 tractor. It can be reached and operated without having to look in its direction. Centrally located beneath the bar are finger tip levers that apply compressed air for effortless steering. Similar levers, at the same location, can be specified to operate air brakes. The operator rides in a comfortable upholstered seat wide enough for two men. He controls the 181-hp. diesel engine at a throttle lever on the right-hand side.

Drawbar pull is 34,530 lb. in first gear at maximum engine torque. It is 13,120 lb. in third gear, 7,660 lb. in high gear. Reverse pull rates 15,830 and 32,590 lb. in high and low gear. Travel speed is 1½ to 5½ mph. forward, 1¾ to 3½ mph. in reverse at 1,500 rpm., the rated engine speed. Length overall measures about 167 inches. Width is about 112 inches. Height at the dashboard is about 83 inches. Weight is 32,500 pounds. Ground pressure is 7.37 lb. per square inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9014

FORCE 5 Action

5 movements in one numbering machine

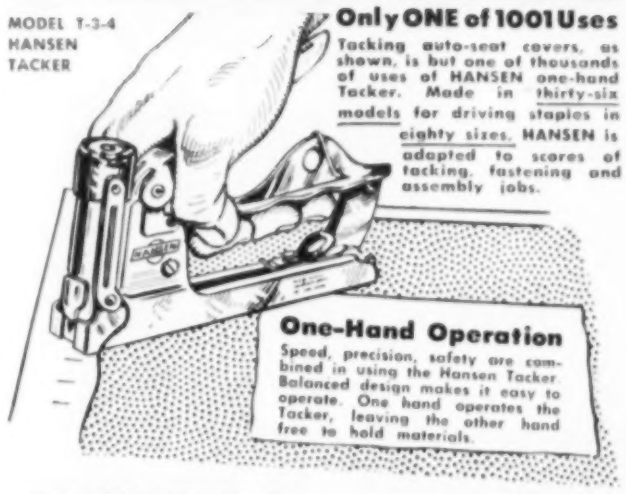
One machine fills scores of numbering needs . . . provides consecutive, duplicate, triplicate, quadruplicate or repeat numbering at the flick of a finger. Write for prices and catalog.

WM. A. FORCE & COMPANY, INCORPORATED
216 NICHOLS AVENUE, BROOKLYN 8, N. Y.

If you write maker identify as IEN-9015

YOU CAN DO IT BETTER with HANSEN ONE-HAND TACKER

MODEL T-3-4 HANSEN TACKER



Only ONE of 1001 Uses

Tacking auto-seat covers, as shown, is but one of thousands of uses of HANSEN one-hand Tacker. Made in thirty-six models for driving staples in eighty sizes, HANSEN is adapted to scores of tacking, fastening and assembly jobs.

One-Hand Operation

Speed, precision, safety are combined in using the Hansen Tacker. Balanced design makes it easy to operate. One hand operates the Tacker, leaving the other hand free to hold materials.

HANSEN SAVES time — steps — materials

TIME—self-contained, ready for instant, continual use. STEPS — saves back-tracking for tacks. MATERIALS — precision driving, insuring neater, better work.

Request Booklet . . . today

A. L. HANSEN MFG. CO.
5051 RAVENSWOOD AVENUE • CHICAGO 40, ILLINOIS

If you write maker identify as IEN-9016

Here's the camera that helped JOHN DEERE build a better beet harvester

Sometimes high speed movies solve design problems in the most unexpected places. A sugar beet field, for example.

An experimental John Deere sugar beet harvester ran into a snag in field tests. Spinning spring teeth which remove the heavy, green tops prior to lifting the beet roots were failing in use. This was attributed to the recoil vibrations resulting from the weight of the tops and to rough, uneven ground which caused torsional deflections as great as 60 degrees.

To see exactly what happened, John Deere engineers carried their Kodak High Speed Camera out into the field and took movies of the fast-moving action at 1,000 and 3,000 frames a second. When the films were projected at normal speed, action was slowed almost 200 times. Study of the movies showed how steel or rubber dampeners would solve the problem. They also indicated how redesigning the mounting of the spring would further reduce recoil vibration.

The Kodak High Speed Camera may well be the tool that can help solve your problem of high speed mechanical action or fluid flow. It's easy to use and has the right speed range for most industrial applications. For complete information, send for a copy of our booklet. Or, write for details on a sound movie, "Magnifying Time."

Industrial Photographic Division
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

the Kodak HIGH SPEED Camera

Kodak

If you write maker identify as IEN - 9018

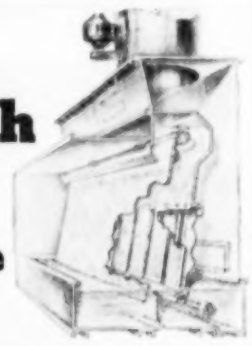
A FULL 5 x 10 CAPACITY LOW COST SAW FOR LARGE AND SMALL PLANTS

WRITE FOR DETAILS

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN - 9019

NEW Spray Booth lowers maintenance costs!



The enemy of economy in most spray booth installations is time-consuming cleaning. But now, these features of Binks DUC Water-Wash Booth provide the economy you've been seeking:

- *Binks DUC Booth cuts cleaning time* because it prevents build-up of pigment on booth surfaces.
- *Binks DUC Booth cuts cleaning time* by eliminating difficult maintenance. Such major parts as baffles and water curtain come out by hand without tools.

Send for Bulletin DUC—it's FREE!

Describes 7 major advantages booth provides to save you time and money. No obligation. Write: Binks Manufacturing Company 3120-34 West Carroll Ave., Chicago 12, Ill.

Binks EVERYTHING FOR SPRAY PAINTING

GUNS • SPRAY BOOTHS • MATERIAL TANKS • EXTRACTORS & ACCESSORIES

REPRESENTATIVES IN PRINCIPAL U. S. & CANADIAN CITIES • SEE YOUR CLASSIFIED DIRECTORY

If you write maker identify as IEN - 9020

Watertight . . . as a CORKED BOTTLE

Moisture cannot penetrate the one-piece Neoprene body of a JOY electrical plug . . . when engaged, even its contacts are enclosed in a protective Neoprene housing through the *cork-like* action of JOY's famous water-seal. Permanently vulcanized to cable, it cannot crack . . . won't lose its shape . . . and requires no special considerations to insure a long life of useful service. A favorite since '26, JOY electrical connectors are now available in styles and sizes for nearly any portable electrical power transmission need. Why risk electrical misfits when the best actually costs less, in the long run? For more details ask for your free copy of Bulletin MC108 today!

ME 152.4

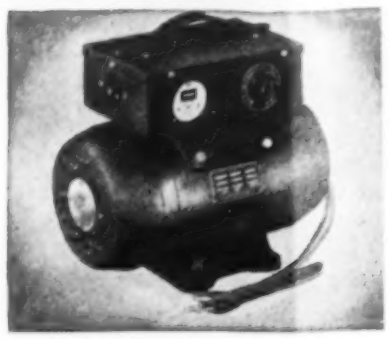
MORE THAN 100 YEARS OF ENGINEERING LEADERSHIP

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

If you write maker identify as IEN - 9021

GENERATOR . . DC converter for 115 volt single phase ac. output

Source: CARTER MOTOR CO.
2644 N. Maplewood Ave., Dept. 10, Chicago 47, Ill.



Manual frequency control

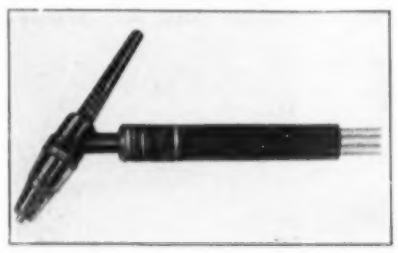
Output ratings are 300, 400 and 500 watts for this new Custom Converter with manual frequency control. It is a companion unit to the one previously described IEN-7046-53. It is designed to deliver 60-cycle output at rated load at the highest input voltage that may be encountered. Each assembly is designed to match power factor, voltage, frequency and load requirements.

The rheostat and frequency meter are mounted in an aluminum housing on the converter housing. A noise filter can be supplied. A recessed dc. male plug is supplied for 32, 64, 115 and 230 volt input. Heavy stranded input leads are provided for battery connections on 12, 24 and 28-volt models. A flush ac. mounted receptacle is supplied for output hookup. A carrying handle completes the assembly.

If you write maker identify as IEN - 9022

WELDING . . Gas shielded arc torch, water cooled design rates 500 amp.

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Room 308, New York 17, N. Y.



For continuous duty

Heliarc HW-12 is a new size in the line of gas shielded arc torches, previously described IEN-11998-53. It is suited for dc. welding on straight or reversed polarity, for ac. high frequency welding and for hard facing. It will weld most commercial metals. Standard ⅛ and ¼-in. bodies are supplied to hold collets ranging from 0.04 to ¼ inch. Two torch caps permit using 3 or 7-in. electrodes. The body is sheathed in tough heat resistant plastic. No additional asbestos shielding is required.

Cooling water flows directly into the body and down around the jacket holding the gas cup. Return flow leaves the body through a plastic hose that encloses the power cable so the cable also is cooled. Straight internal passages can be kept clean without difficulty.

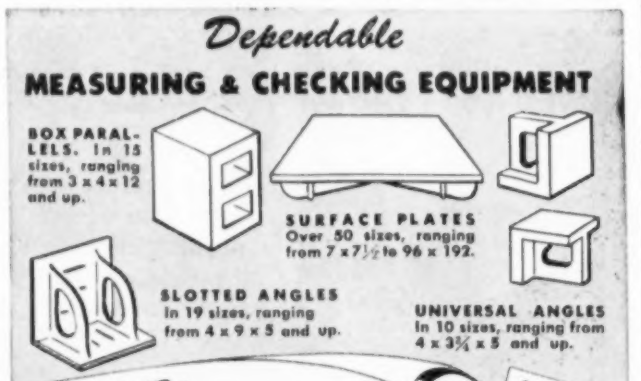
If you write maker identify as IEN - 9023

A coal mine car has been made of aluminum by Reynolds Metals Company, 2502 S. 3rd St., Louisville, Ky. It has 6-ton capacity. It weighs 1,614 pounds. This compares with 4,417 pounds for a standard steel design. It will not rust or scale. Wet coal will not stick to it. The aluminum absorbs vibration. The rivets are aluminum also.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9024

Dependable
MEASURING & CHECKING EQUIPMENT



and Now
HAND WHEELS, KNOBS, HANDLES
Cadmium Plated READY TO DELIVER
Non-rusting — good looking

Send for Complete Catalog

We also build jigs, fixtures, special tools and machinery. Send us your blueprints.

MACHINE PRODUCTS CORPORATION
6771 E. McNichols Rd. Dept. F Detroit 12, Mich.

If you write maker identify as IEN - 9025

PROBLEM: *Your paint jobs fail because of corrosion, moisture or abrasion*

SOLUTION:

ERKOPON

The tough new plastic paint that effectively resists chemicals, dampness, friction

Erkopon produces a hard, tough protective coating on any type of reasonably clean surface. It has unusual resistance to sun, moisture and chemicals, and it retains its color and gloss indefinitely.

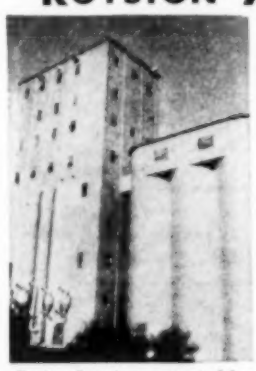
It forms a highly durable bond, and successive coats fuse into one protective film that offers superior resistance to corrosion and abrasion.

Write for full information and recommendations on your problem

ERKOTE® TECHNICAL COATINGS
EARL PAINT CORPORATION
240 Genesee Street • Utica, New York

If you write maker identify as IEN - 9026

Years of Protection With One Coat of ROYSTON ALUMINUM MASTIC



Grain elevator protected by Royston Aluminum Mastic

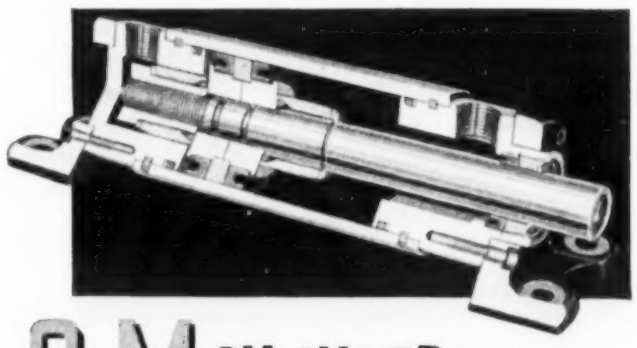
- Protects against weathering, water penetration, absorption
- Resists corrosion by acid or alkali industrial fumes
- Ten times as thick as paint, non-reactive with other metals
- Remains flexible, won't peel, check, alligator, craze or pit
- Plasticized, for tight bond on metal, concrete or most brick
- Has heat reflective qualities typical of aluminum coatings
- Heavily pigmented with aluminum, two lbs. per gallon
- No sand blasting needed, easy to apply by brush or spray gun
- Ready-mixed, no thinner needed, covers 125 sq. ft. per gallon

Royston Aluminum Mastic is specially designed to combine a heavily embodied, corrosion resistant film with the heat reflective qualities typical of liquid aluminum paints or coatings. While the finish is not as brilliant as that of aluminum paints, it gives far greater protection against weathering and water penetration or absorption. Royston Aluminum Mastic is of the same superior quality as other Royston Laboratories' "tailor-made" protective coatings for industry.

For complete information and samples write . . . . . .

ROYSTON LABORATORIES, INC.
P. O. BOX 112-J, BLAWNOX, PA.

If you write maker identify as IEN - 9027



O-M CYLINDERS (air hydraulic)

are EASIER to install and service in any application

Free from projecting tie rods and end caps, O-M Cylinders slip easily into deep recesses in machine bases. Of All-Steel construction (no castings), they can be turned down to fit in close quarters.

They are easily disassembled without wrenches due to internal-locking key. There are no gaskets to replace when re-assembled.

O-M Cylinders "Fit Where Others Won't". They have the lowest cofficient of friction of any cylinder. All end plugs are tapped for universal mounting. The complete range of mounting brackets are interchangeable bore for bore.

Available in a complete range of sizes (1½" to 8" bores), with standard, 2 to 1 and oversize drive rods. Completely interchangeable parts. FREE Catalog and free set of ½ and ¼-scale templates show all cylinders and mounting brackets.

14-day delivery on most sizes

FREE CATALOG and Templates
ORTMAN-MILLER MACHINE CO.
1208 150th Street, Hammond, Indiana

If you write maker identify as IEN - 9028

now! stop stoppage

in bins & hoppers with

. . . the only device that feeds stubborn materials uniformly & noiselessly from bins & hoppers by positive displacement

Pulsating Neoprene panels move the contents, not the bin . . . prevent arching and funneling, eliminate noise, save bin repairs, permit closed tops. PneuBin succeeds where other devices fail! Write for free "Flow Stoppage Report" form. A product of GEROTOR MAY CORP., Baltimore 3, Md. . . . manufacturers of

GEROTOR hydraulic pumps & motors

If you write maker identify as IEN - 9029

Do you have any problems due to wear, abrasion or corrosion of metal parts?

Electrolizing CAN PROVIDE THE SOLUTION!

Hundreds of manufacturers in every field from home appliances to military equipment . . . wherever the resistance of metal to wear, abrasion or corrosion is important . . . are specifying Electrolizing.

A CASE IN POINT:

A major pump manufacturer was asked to produce a booster pump to be used on certain army aircraft. The specification called for a 15-hour dry run without galling. After every known surface treatment failed within 10 hours, it was suggested that they try Electrolizing. Electrolized shafts ran 55 hours with no signs of galling. After repetitive model and field tests Electrolizing was specified for the job.

Whether your problem is abrasion, wear or corrosion, ELECTROLIZING can provide the solution. Write for our new booklet, today.

THE Electrolizing CORPORATION

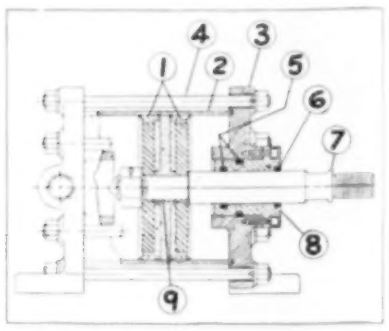
1505 EAST END AVENUE, CHICAGO HEIGHTS, ILLINOIS

Plants:
Providence 1, R.I. 148 W. River St. — Cleveland 10, Ohio 1650 Collamer Rd. — Chicago Heights, Illinois 1505 East End Ave.

If you write maker identify as IEN - 9031

CYLINDER . . Double acting pneumatic 1½ to 6 in. sizes, to 150 pounds

Source: BOND RESEARCH LABORATORIES INC.
82-86 Winslow Ave., Dept. IEN, Somerville 44, Mass.



Bronze throat bushing

Cup packings 1, made of rubber or reinforced fabric, ride in a brass tube 2. It forms the barrel of this new cylinder. It is fitted with heads 3, held in place with tie-rods 4. The heads are made of bronze castings, in sizes to 4 inches. Cast iron is employed in the larger assemblies.

O-rings 5 and a wiper ring 6 seal and protect the chromium plated piston rod 7 in the bronze throat bushing 8. A feature in the design is the shouldered piston hub 9 and retaining plates on the two piston faces to grip the cup packings and make a metal-to-metal assembly for accurate stroke length.

The cylinder conforms to JIC standards. It is available in a number of mounting arrangements and can be specified plain or with air cushioning at one or both ends. Standard stroke length ranges to 24 inches. Longer strokes can be specified.

If you write maker identify as IEN - 9032

WELDING . . Stainless steel and tool steel wire for inert arc work

Source: DRAWALLOY CORPORATION
Alloy St. at Lincoln Highway W., York 16, Pa.

For automatic welding machine

Spooled wire, in a range of sizes between 0.035 and 3/32 in., is now available in stainless steel and tool steel from the company's new wire mill. The wire is precision wound on labeled spools each containing about 25 pounds. The spools are expendable and are packed in a new type of carton.

If you write maker identify as IEN - 9033

LUBRICATING . . Hycar rubber oiler flexes to deliver drop or solid stream

Source: TOMER COMPANY
4244-48 Abbott Ave. S., Minneapolis 10, Minn.

$1.30 and $1.60

Flexoil is a new flexible oil can that will handle oils in viscosities ranging to SAE 90. Pressure on the base causes the rubber housing to flex for oil delivery. The metal base plate extends beyond the housing for stability when the oiler is set down. There is no mechanism to repair or replace. Mineral or vegetable oil will not attack the Hycar rubber. A threaded steel fitting takes various shapes and design of spout. Two sizes hold 4 and 8 oz. of oil.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9034

DIAPHRAGMS

FOR ALL INDUSTRIAL APPLICATIONS

One of Acushnet's many specializations is in the field of diaphragms. We have achieved notable success in the design, development and molding of all types of diaphragms, with or without fabric inserts, from the size of a dime up to three feet in diameter.

Special stocks are expertly compounded with properties to resist various fluids and gases, extreme high or low temperatures, or combinations of these requirements. We are equipped to produce rubber diaphragms bonded to metal.

Acushnet PROCESS COMPANY

Send for your copy of the Acushnet Rubber Handbook, a comprehensive rubber data reference for all types of molded rubber parts.

Address correspondence to 760 Belleville Ave., New Bedford, Mass.

If you write maker identify as IEN - 9035

Check these features of the New G-E RENEWABLE FUSE

Knife blade

Ferrule

It's improved 4 ways!

1. Silver-plated electrical contact areas keep the new G-E fuse from overheating because of copper oxidation. 2. New link design gives accurate protection, plus freedom from blows caused by harmless, momentary overloads. 3. Only two parts to remove when replacing links. 4. Solid brass fittings and a thick fiber casing make the new G-E fuse exceptionally rugged.

Made in ferrule and knife-blade ratings—listed by Underwriters' Laboratories, Inc. It will pay you to get further information—see your G-E Construction Materials distributor, or write to Section D86-812, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

You can put your confidence in—

GENERAL ELECTRIC

If you write maker identify as IEN - 9036

LOOK FOR THE MARK OF PRECISION **Starrett** STAMPED ON EVERY PIECE

Save time. Save money. Save valuable man and machine hours. Use Starrett precision ground Die and Flat stock for all precision parts, pieces, punches, dies and special tools having two flat, parallel sides. Just select the right type and size of flat stock from the complete Starrett line . . . lay it out . . . and saw it out. (For best cutting, use Starrett Band Saws.)

Keep a supply of frequently used sizes in the tool crib . . . or call your Industrial Distributor for prompt, dependable, quality service.

Each piece is marked for type and size and individually packaged in a protective envelope showing chemical analysis, hardening and tempering information.

WRITE FOR NEW FOLDER AND WALL CHART listing the 295 sizes available and giving hardening formulas for the four types. Address Dept. N

Starrett SINCE 1880 WORLD'S GREATEST TOOLMAKERS — THE L. S. STARRETT COMPANY Athol, Massachusetts, U. S. A. — Buy THROUGH YOUR INDUSTRIAL DISTRIBUTOR

If you write maker identify as IEN - 9037

Lightweight Easy-to-use Strap Cutter

This lightweight cutter cuts steel strapping swiftly and easily with just the pressure of your hand.

Weighing just one pound and only 9½ inches long—Acme Steel's E14AO Strap Cutter cuts steel strapping up to ¾ inch. Built-in band guide keeps strap from turning on edge or wedging between blades. Write Acme Steel Products Division, Dept. IEN-83, 2840 Archer Avenue, Chicago 8, Illinois.

Strap It. . . Stitch It . . . Ship It . . . Safely **ACME STEEL**

If you write maker identify as IEN - 9038

measure tension Accurately!

When you equip your shop or laboratory with Apco Mossberg Torque Screw Drivers, testing or measuring final tension on precision fasteners is quicker...easier...and infinitely more accurate. Here's why.

Apco Torque Drivers are especially designed for maximum convenience, precision performance. Large, easy-to-read dials assure instantaneous measurements. Lighter, stronger construction makes them easy to handle . . . simple to operate. There are no springs or delicate parts to get out of kilter.

What's more, every Apco driver—from the 0 to 6 in. oz. size to the 0 to 24 in. oz. models with large positive and positive-negative dials—comes complete with a standard Stanley tool holder to accomodate interchangeable bits. With an Apco Driver, you can tighten or test torque on *all* types of fasteners—including light plastic screws.

Get the full facts on Apco Mossberg Torque Tools today! Contact your distributor or write direct. Apco Mossberg Co., 171 Lamb Street, Attleboro, Mass., U.S.A.

APCO MOSSBERG CO.
ATTLEBORO, MASS.

If you write maker identify as IEN - 9039

LOUDNESS REDUCED 50%*

Inside a Burgess-Manning Acousti-Booth

- The hushed interior of a Burgess-Manning Acousti-Booth provides a quiet, restful place to hear well.
- Light, sturdy construction for ease of moving . . . compact design.
- Doorless construction . . . light, airy, well ventilated.
- Wall and floor models.
- Suited to any noisy location.

Model 211 Floor Booth

Model 602 Wall Booth

** Based on studies by a prominent research organization.*
Write for Bulletin A-107

BURGESS-MANNING COMPANY
Architectural Products Division
5970-A Northwest Highway, Chicago 31, Illinois

If you write maker identify as IEN - 9040

with **AURAND**
CLEANING TOOLS

Clean off accumulations of scale, paint, rust or any foreign matter from **any hard surface with Aurand Cleaning Tools.** Toothed cutting wheels, loose pinioned on rotating head chip away accumulations at high speed. Positive depth shoe prevents cutting into permanent surface and assures uniform cleaning of entire are.

Two sizes in electric or pnuematic models.

FOR FULL DETAILS, WRITE DEPT. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

If you write maker identify as IEN - 9041

COMMUNICATING . . Telephone connects plant and office departments

Source: FARMERS ENGINEERING & MFG. CO.
653 Farmers Blvd., Irwin, Pa.

To apply anywhere

Pagephone is a new assembly of centrally located amplifier, junction box, handset stations and a ⅜-in. connecting cable with two pair of wires. The handset stations include loud speakers, volume control and indicator lights to show when the circuit is clear or in use. The stations themselves are wired in parallel to the cable.

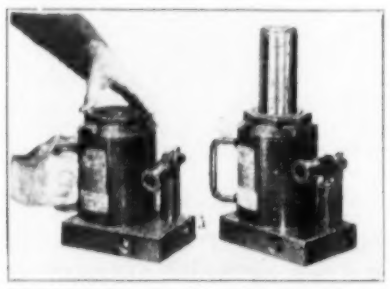
A call is made at any station by removing the handset from its hook, pressing a button on the handset and speaking the name of the individual sought. This results in calling this individual through the loud speakers at all of the other stations. He can answer from any station and talk privately with the individual who called him. It also is possible to hold a conference with several individuals at different stations.

When specified, the equipment can include a central operator station where page calls can originate and announcements can be made over the loud speakers while a private conversation is being carried on. Standard, heavy or mill duty equipment is available to meet given service requirements. One amplifier will handle about 20 stations.

If you write maker identify as IEN - 9042

JACK . . Hand hydraulic design rates 35 ton, has automatic air vent

Source: DUFF-NORTON MFG. CO.
2707-11 Preble Ave., Pittsburgh 30, Pa.



Long stroke pump

Patented air vent, in the ram of this new Model 35-H-9.7 jack, eliminates need for air space otherwise required in the fluid chamber. It makes unnecessary the use of a set screw to break an "air lock." As a result, the jack can be made light in weight, compared with its capacity, and no operator attention is required for venting.

Closed height is 9.7 inches. Extended height is 15¾ inches. Head diameter is 2⅝ inches. The base measures 6 by 8 in. and the handle is 28 in. in length. Weight is 55 pounds. The new jack is a companion design to the 25-hp. assembly, originally developed in 1948.

If you write maker identify as IEN - 9043

We described a new ultraviolet lamp for General Electric in 1950 to apply in deodorizing by its ability to generate ozone in the air. Now you can purchase a fixture with one, two, or three of the lamps ready to put up in offices, rest rooms, toilets, from General Manufacturing and Distributing Company, 553 Quincy Ave., Quincy, Mich.

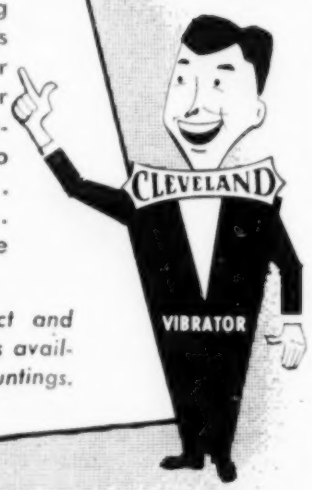
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9044

BIN STUCK LATELY?

Turn to a CLEVELAND air vibrator. It's surprising the variety of materials it will move through your bins, hoppers and other handling devices. Economical and efficient to use for *anything* . . . gravel, ore, chemicals . . . inclined to arch, bridge or stick.

Standard metallic impact and air-cushioned, quiet types available in 29 different mountings.



COMPLETE LITERATURE ON REQUEST
THE CLEVELAND VIBRATOR CO.
2736 Clinton Avenue • Cleveland 13, Ohio

If you write maker identify as IEN - 9045

Get the Facts! about WATER HAMMER and how you can ELIMINATE THIS COSTLY NUISANCE with

WILLIAMS-HAGER
FLANGED
Silent
CHECK VALVES

Yes—you can put an end to costly, dangerous water hammer in your piping system—NOW—with Williams-Hager Flanged Silent Check Valves. Compact and durable, they can be installed without special tools—in any position. Built for years of silent service, they are available in standard pipe sizes from 1" to 20". Investigate today!

WRITE FOR BULLETIN WH-851

This bulletin contains all the facts about water hammer—its cause, effect and control. Write for your copy!

THE WILLIAMS GAUGE CO., INC.
2900 Pennsylvania Avenue, Pittsburgh 33, Pa.

If you write maker identify as IEN - 9046

Just Off The Press!

SEND FOR FREE COPY TODAY!

GET THIS IMPORTANT FORK LIFT DATA NOW!

Here's the story of the amazing, new BUDA Fork Lift Truck! It out-maneuvers, out-lasts any other truck! It does the biggest jobs fastest! Strip it for maintenance in 22 seconds; disassemble in 22 minutes; change clutch in 30 minutes! See how and why in new 36-page booklet. Write to:

The Buda Company
Harvey, Illinois

BUDA

If you write maker identify as IEN - 9047

Try this heat-resistant "Scotch" Electrical Tape made of glass!

See for yourself how "Scotch" Electrical Tape No. 27 can "take it" when the heat's on!

The glass cloth backing won't burn, stretch, shrink or rot. And the thermosetting adhesive cures in 1 hour at 300°F to form a lasting bond of great strength. Curing increases the dielectric strength about 500 volts.

STOCK UP *on "Scotch" Electrical Tape No. 27 today! 66 ft. x ½ in. rolls are packed in individual cans. Be ready for the "hot spots" before they're "trouble spots" for you!*

The term "Scotch" and the plaid design are registered trademarks for the more than 300 pressure-sensitive tapes made in U.S.A. by **Minnesota Mining & Mfg. Co., St. Paul 6, Minnesota.**

If you write maker identify as IEN - 9048

Left— Union Special Style 20100 H Bag Closing Machine

Here's how to close MULTIWALL PAPER BAGS

FOR lower production costs ...stronger, neater closures ...ability to get out rush orders in a hurry, you can't beat Union Special Bag Closing Machines! Specially built to stand up under heavy production schedules, these machines provide the high output rates needed to meet modern competitive conditions.

In the Union Special line, it's easy to find the right unit to meet your particular requirements. ASK FOR RECOMMENDATIONS.

SEND FOR THIS BULLETIN!

Get your copy of this 16 page illustrated bulletin containing helpful data and charts on the complete Union Special line of bag closing machines. UNION SPECIAL MACHINE CO., 410 North Franklin Street, Chicago 10, Illinois

UNION SPECIAL

If you write maker identify as IEN - 9049

Speed up Machine Cleaning with TORNADO®

Want a tip on a way to make short work of an ordinarily messy and time consuming job? Follow the lead of the Dukes Co., Chicago manufacturers of hydraulic equipment. Their maintenance men now use Tornado vacuums to clean muck out of coolant tanks and sumps.

You don't need to be a contortionist when you use handy Tornado accessory tools—and they do the job in a matter of seconds! Contrast this method with the job of hand scooping oily residue from a hard-to-reach sump bottom. No conversion necessary for wet or dry vacuuming either! Tornado is ready to clean dirt from the floor or chips from the machine table instantly.

If you want greater efficiency from your productive equipment and a cleaner, more efficient shop, find out more about Tornado.

WRITE FOR BULLETIN 600

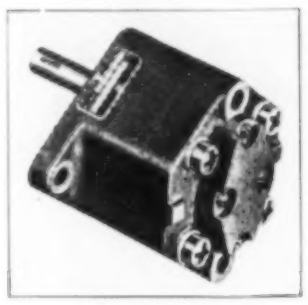
BREUER ELECTRIC MFG. CO.

5108 North Ravenswood Avenue • Chicago 40, Illinois

If you write maker identify as IEN - 9051

PUMP . . Gear type hydraulic for built in application on equipment

Source: WEBSTER ELECTRIC CO.
1902 Clark St., Racine, Wis.



Bulletin H2A2

Three sizes in the new Series HB hydraulic pump rate 1.8 to 29 gpm. at 1,800 rpm. and 1,000 lb. pressure based on SAE 10 oil at 120 deg. F. The series includes three somewhat smaller pumps than the Series HC, previously described IEN-8323-83.

An internal relief valve can be specified and is adjustable for pressure between 500 and 1,200 pounds. This valve cannot be used as a control or pressure regulator. Type HBP is designed for face or wet sump mounting. Type HBS is a sealed assembly for direct geared or belt drive. Pipe threaded or manifold porting can be specified. Overall length is about 4⅞ to 5¼ in. for Type HBS.

If you write maker identify as IEN - 9052

METALS . . Enamel coated strip in aluminum, brass, steel, zinc coils

Source: APOLLO METAL WORKS
6678 S. Oak Park Ave., Dept. I-2, Chicago 38, Ill.

Can be drawn, bent, formed, fabricated

Standard colors are black, blue, brown, green, red, white, yellow in a new non fading corrosion resistant enamel finish. It is now available on aluminum, brass, steel and zinc coils. The baked finish will stand up under forming, bending and fabricating the metal. It will not crack, chip or chalk in service under severe weather conditions.

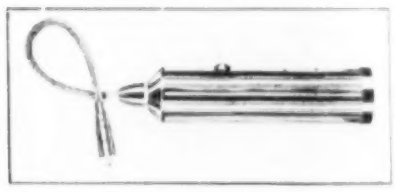
Applications include bottle caps, metal awning covers, wall tile, picture and mirror frames, eyelets, drapery and curtain hardware, tubing, clips, screw caps, ends and covers for fiber cans, badges, brush ferrules, buttons, switch plates, lighting fixtures, toys, molding and rolled sections.

Width ranges from ⅛ to 30 inches. Gage is 0.01 to 0.036 inch. The material is supplied in coils. The surface can be specified plain or crimped.

If you write maker identify as IEN - 9053

LIGHTING . . Inspection light will enter through ½ in. opening

Source: ERICSON MFG. CO.
5207-11 Euclid Ave., Cleveland 3, Ohio



Two models

Standard dry cells fit loosely in the cylindrical housing of this new portable light. They are slid into position by the operating switch which holds them in contact. The lamp is mounted at the end of a flexible woven metallic cord. The lamp head will pass through a ½-in. opening.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9054

NEW.. COMPLETE LINE of END MILLS by GO & GO

SEND FOR CATALOG

NOW you can get off-the-shelf delivery on end mills that GO & GO . . . New styles . . . Additional sizes . . . Long lengths, extra-long lengths, small diameters and 2" dia. shank heavy duty end mills have been added to provide a complete range, as standardized by the Metal Cutting Tool Institute. The famous GO & GO quality is built into these tools. Write for new, convenient catalog covering all standard end mills and milling cutters.

GODDARD & GODDARD COMPANY
MILLING CUTTER ENGINEERS AND MANUFACTURERS
P. O. Box 68, Brightmoor Station
DETROIT 23, MICHIGAN

If you write maker identify as IEN - 9055

space saving HV FILTER has longer life greater efficiency

today's best buy is better air!

AAF's new High Velocity filter handles the same air volume in ¼ the space of standard unit filters. It operates effectively at velocities from 300 to 500 fpm and maintains uniform efficiency over this wide range of velocities. It's the exclusive *pyramid pocket* filtering media that makes the difference!

The H-V's low resistance, large dust capacity and longer life make it a superior unit for limited space conditions.

Available in all standard sizes and 1", 2" and 4" depths. Engineering Bulletin #203 gives complete information and technical data. Write for it today.

AAF American Air Filter COMPANY, INC.
335 Central Avenue, Louisville 8, Ky.
American Air Filter of Canada, Ltd., Montreal, P. Q.

If you write maker identify as IEN - 9056

Lubricates air cylinders, valves and tools ...adds years to their life

Air Line Lubricator Schrader No. 3048A

You will get better service and longer life out of your air control equipment if they are lubricated regularly. And there is no better way to do this than with the automatic Schrader lubricator.

Operating on the venturi principle, small drops of oil are picked up and continuously mix with the air to lubricate the equipment. Connected right in the air line . . . no moving parts. Transparent plastic bowl shows oil level at all times.

Write for details on the Schrader lubricator as well as other Schrader air line accessories that will help you get the most out of your air line equipment.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-33, Brooklyn 38, N. Y.

If you write maker identify as IEN - 9057

Bulk-Handling "BUSYBODY"

"PAYLOADERS" are unusual and versatile tractor-shovels that stick their noses into all sorts of bulk material handling jobs, indoors and outdoors. They unload boxcars, load trucks, charge hoppers, carry, stockpile and spread . . . they spot cars, lift, lower and push.

Multiple forward and reverse speeds and big pneumatic tires gives them mobility and speed so they can do more jobs faster . . . save time, manhours and increase production. "PAYLOADERS" are made in sizes from 15 cu. ft. to 1½ cu. yd. bucket capacity. There's a model for every job and full facts are yours for the asking. The Frank G. Hough Co., 841 Sunnyside Ave., Libertyville, Illinois.

PAYLOADER®
THE FRANK G. HOUGH CO. • Since 1930

If you write maker identify as IEN - 9058

FREE DATA ON MODERN THERMOSTATS

New reliability, flexibility and sensitivity in multi-purpose units

Learn about a thermostat that is sensitive *on the outside*. One where the shell itself activates the electrical contacts for the control of temperature, humidity, vapor level, radiant heat and other variables where temperature is a factor. The Fenwal THERMOSWITCH® control has a single-metal shell which expands or contracts *instantly* with temperature changes. Its efficiency is high, cost low. Fenwal THERMOSWITCH controls are now being used throughout industry to control temperature of gases, solids or liquids.

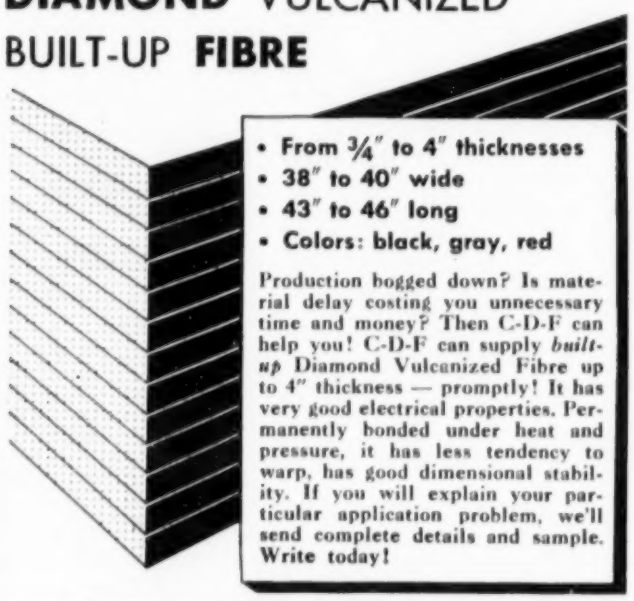
It costs you nothing to have the complete data on file. Also, Fenwal engineers are glad to cooperate with your engineering staff on special or new temperature control projects. **Write for Catalog 400, Fenwal Incorporated, 78 Pleasant St., Ashland, Massachusetts.**

Fenwal **THERMOSWITCH®**
Electric Temperature Control and Detection Devices
SENSITIVE...*but only to heat*

If you write maker identify as IEN - 9059

NOW...FAST... CDF

DIAMOND VULCANIZED BUILT-UP FIBRE



- From ¾" to 4" thicknesses
- 38" to 40" wide
- 43" to 46" long
- Colors: black, gray, red

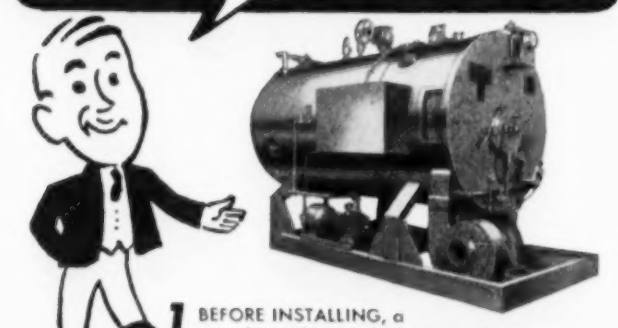
Production bogged down? Is material delay costing you unnecessary time and money? Then C-D-F can help you! C-D-F can supply *built-up* Diamond Vulcanized Fibre up to 4" thickness — promptly! It has very good electrical properties. Permanently bonded under heat and pressure, it has less tendency to warp, has good dimensional stability. If you will explain your particular application problem, we'll send complete details and sample. Write today!

THE NAME TO REMEMBER . . . DIAMOND VULCANIZED FIBRE

Continental-Diamond Fibre Company
NEWARK 21, DELAWARE

If you write maker identify as IEN - 9060

Look at the SERVICE *you get with* AMESTEAM GENERATOR *!*



1 BEFORE INSTALLING, a complete "How-to-do-it" manual.

2 AFTER INSTALLING, our LOCAL service man starts your unit and provides three months' free service.

— PLUS —

— a compact, self-contained unit fully piped and wired for low-cost installation, fully automatic and guaranteed 80% efficient.

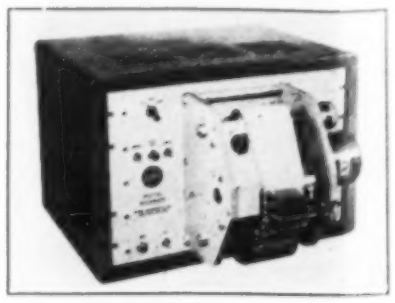
FREE BULLETIN! Write now for AMES bulletins describing 20 sizes, 10 to 600 h.p., 15 to 200# gas or oil. WRITE TODAY.

AMES IRON WORKS INC.
BOX F-83 OSWEGO, N.Y.

If you write maker identify as IEN - 9061

COUNTING . . Electronic recorder prints 150 8-digit numbers per second

Source: POTTER INSTRUMENT CO.
113-17 Cutter Mill Road, Great Neck, N. Y.



Easy to read

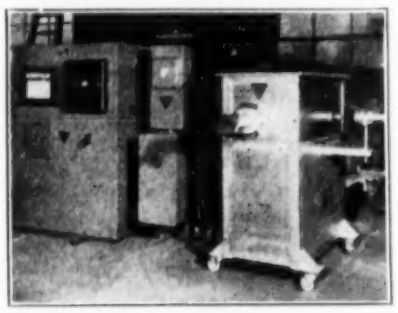
Digital Recorder, Model 960, is a new electronic instrument that employs styli, corresponding to the lamps in the Potter 1-2-4-8 binary, to record counts on a Teledeltos electrosensitive tape. Each stylus, in its group of four, corresponds to one lamp in the binary. The instrument is available with 20, 26 or 32 styli. Dimensions are about 17 by 17 by 12 inches. A mounting bracket adapts the unit to a standard 19-in. relay rack.

The tape drive is controlled for intermittent advance by the data input at speeds below 10 numbers per second. The movement merges into continuous drive as speed increases above this rate. Independent drive is available also for speeds from 2½ to 20 in. per second. A standard tape roll, 4¼ in. in width by 400 ft. in length, will take 50,000 recordings.

If you write maker identify as IEN - 9062

HEATING . . Electric tube furnace carbon resistor type, to 5,000 deg. F.

Source: PERENY EQUIPMENT CO.
891-95 Chambers Road, Columbus 12, Ohio



Model CT-312

Temperature can be raised to 5,000 deg. F., from a cold start, in this new model CT-312 tube furnace. It is intended primarily for formation, fabrication and processing of ceramic and refractory materials. The heating zone in the tube measures 12 in. in length by 3 in. in diameter.

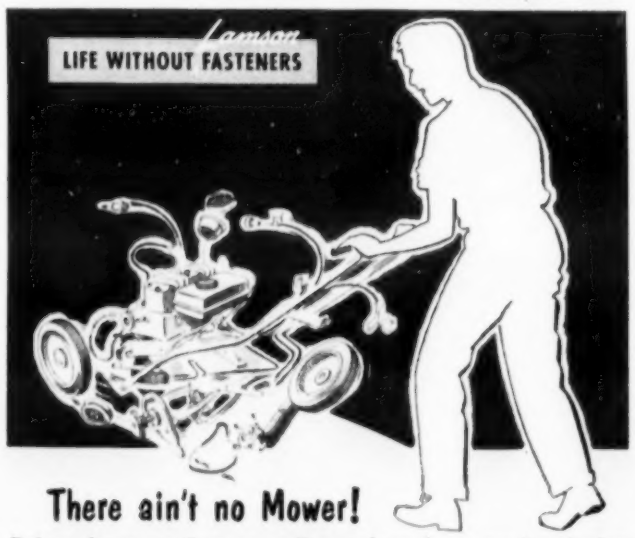
The electric elements are water cooled and protected with fail-safe electric interlocks. The furnace shuts down in the event of water flow failure to either the transformer or the electrodes. Equipment includes either an Ignitron-Thyratron type or saturable reactor to supply power that is continuously variable between 1 and 100 per cent of connected load. Overall dimensions are 23 by 41 by 60 inches.

If you write maker identify as IEN - 9063

All pails have been round, until recently. Now Wheeling Corrugating Co., 553 Wheeling Steel Bldg., Wheeling, W. Va., is making an oval one. It holds 12 quarts, is made of zinc plated steel. Its shape permits it to rest securely on a step ladder platform. It takes the new mops with clearance to spare. Its curved ends form natural pouring lips. Carrying balance is excellent.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9064



There ain't no Mower!

Bolts and nuts are a "grass roots" necessity to the proper functioning of most mechanical products. Take away the bolts and nuts from a motor lawn mower, for instance, and literally "There Ain't No Mower"!

But in spite of their importance, the cost of the fasteners that go into a *single unit* of any product represent a small percent of its total manufacturing cost.

So it's just plain, good common sense always to use bolts and nuts you *know* are dependable as well as economical.

Lamson & Sessions, with 87 years of experience supplying industry with the best in fasteners, offer you unexcelled facilities to meet your bolt, nut and screw requirements.

Remember, it's *pleasant* and *profitable* to do business with Lamson & Sessions.

The **LAMSON & SESSIONS** *Co.*
1971 West 85th Street • Cleveland 2, Ohio
CLEVELAND AND KENT, OHIO • BIRMINGHAM • CHICAGO

If you write maker identify as IEN - 9065

Ride 'em with— TORIT Cyclone DUST SEPARATORS

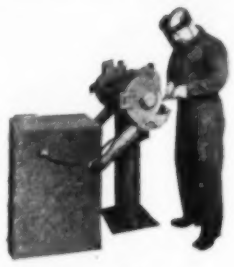
TO RID PLANTS OF ABRASIVE DUSTS

Pecos Pete, legendary cowboy, tamed cyclones for sport. Torit makes them useful.

The ability of a cyclone type Torit Dust Separator to handle large volume is well illustrated above. This model 18-FM unit is making a clean job of getting rubber and fabric dusts from a tire buffing wheel.

If you want to clean up your plant the safe way, install Torit Dust Separators. Like Pecos Pete they'll tackle most any industrial dust problem and run it down to a gentle zephyr. Do it economically too, with little or no interference with present and future production layouts. To get the dope shoot us a line.

see our catalog in MACHINE TOOL CATALOGS or write for copy



Torit Dust Collectors are available in both cabinet and cyclone types, in sizes ranging up to 5 h.p.

TORIT MANUFACTURING CO.
286 Walnut Street St. Paul 2, Minn.

If you write maker identify as IEN - 9066

Plugmold 2000 puts plenty of power outlets wherever you need them

Production's a lot more efficient when your plant has plenty of electrical outlets for power tools, testers, appliances and devices — along the walls or edges of workbenches and tables, right at the point of use. Makeshift wiring and a tangle of extension cords are dangerous to both workers and the work.

Plugmold puts safe, permanent, closely-spaced outlets everywhere in your plant — in your offices, too. It's the fastest, easiest, cheapest way to provide multiple outlets. Write today for full information.

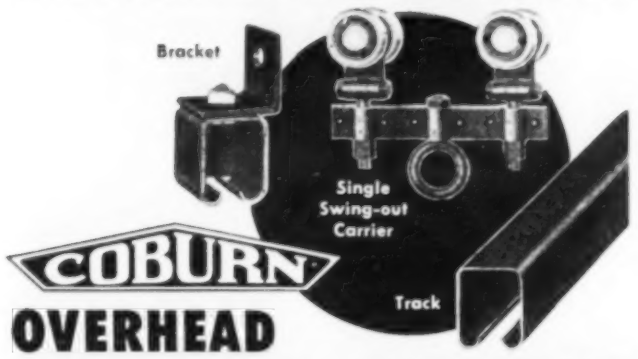
WIREMOLD

Makers of
PLUGMOLD—multi-outlet systems
WIREMOLD—electrical raceways
PANCAKE—overfloor raceways

THE WIREMOLD COMPANY
HARTFORD 10, CONNECTICUT

If you write maker identify as IEN - 9068

BOOST PRODUCTION



COBURN

OVERHEAD CONVEYING EQUIPMENT

Meet today's need for maximum plant production, increased efficiency and faster handling of materials with Coburn Overhead Conveying Equipment. It gives you unobstructed floor space, requires very little headroom, makes it easy to spot work directly over machines. Loads up to 3000 lbs. handled by hand chain or electric hoist; power-operated equipment also available.

For additional information write to Sales and Engineering, 56 Sterling St., Clinton, Mass., or consult your classified telephone directory. Write today for catalog #220.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel and Iron Corporation, Denver, Colorado
PACIFIC COAST: Pacific Coast Division, Oakland, California

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 9069

MODERNIZE WITH TRIPLETT METERS

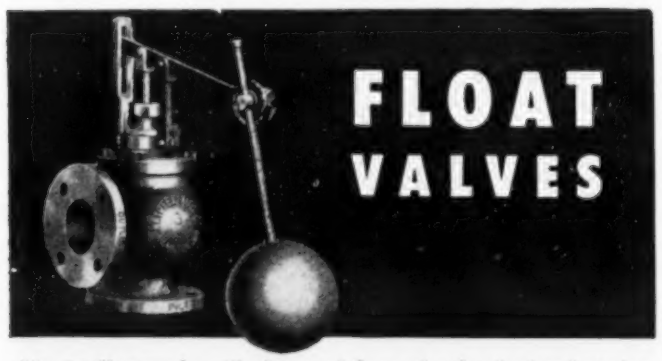
A SIZE, TYPE, AND STYLE FOR EVERY INSTALLATION

Your instrumentation is strictly modern in design and construction with Triplett Meters. You can have sizes 2" to 7" in a wide variety of case shapes and mounting arrangements, A.C., D.C., R.F., Rectifier or Dynamometer. Molded and metal cases, rear illumination, and other special features are available. For precision and economy virtually every meter part is made in Triplett plants under rigid humidity and dust control. Every meter represents the refinements gained in half a century of meter experience. Keep *your* panels up-to-the-minute with Triplett Meters—famous the world over for quality, accuracy, and dependability.

Triplett Electrical Instrument Co.
Bluffton, Ohio, U.S.A.

Triplett

If you write maker identify as IEN - 9070



FLOAT VALVES

No. 77 illustrated — Single seated float valve for dead end service. Internal pilot control. 250 lbs. max. inlet pressure. Does the job of more complicated control valves at a much lower cost wherever tight closing float valves are required for make-up water control. Sizes 2" — 8". Other types. Get BULLETIN 349.

Call Your Supply House or See Classified Phone Directories for Nearest Klipfel Distributor.

Alabama: Birmingham
Arizona: Phoenix
California: San Francisco, Los Angeles
Colorado: Denver
Florida: Tampa
Georgia: Atlanta
Illinois: Chicago
Indiana: Evansville, Indianapolis
Louisiana: New Orleans
Massachusetts: Boston
Michigan: Detroit
Minnesota: Minneapolis
Missouri: St. Louis, Kansas City
Montana: Billings
New York: Buffalo, New York
New Mexico: Albuquerque
North Carolina: Greensboro
Ohio: Cincinnati, Cleveland
Oklahoma: Tulsa
Pennsylvania: Pittsburgh, Philadelphia
Tennessee: Memphis, Nashville, Knoxville
Texas: Dallas
Utah: Salt Lake City
Washington: Spokane, Seattle
Wisconsin: Milwaukee
Canada: Montreal

K-139

Klipfel VALVES, INC. HAMILTON, OHIO

If you write maker identify as IEN - 9071

FASTENING . . Socket screw with button head, No. 8 to 5/8 inch

Source: ALLEN MFG. CO.
131-35 Sheldon St., Hartford 2, Conn.

For smooth assembly

Smooth streamlined assembly surfaces are possible with this new buttonhead socket screw. It is suited particularly for applications that do not permit countersinking. Rounded tops and flush edges of the new screw eliminate exposed sides and will not catch on clothing.

The socket is made with the company's Pressur-Forming process in which the screw body is cold worked and the socket head is cold drawn to impart strength to the metal by preserving the steel fibers continuous and uncut. Sizes range from No. 8 by 1/4 in. to 5/8 in. by 2 in. with NC threads. These sizes are also standard with NF threads except in the 1/2 and 5/8-in. diameters.

If you write maker identify as IEN - 9072

METAL PARTS . . To specification are made of powdered stainless steel

Source: CHRYSLER CORPORATION
6503 Harper Ave., Detroit 31, Mich.

Technical data upon request

Filter elements, to provide non-corrosive service, are now available in quantity production. Shape, size and porosity are to specification from the company's recent new installation of powdered metal molding equipment. The new elements are in addition to the cams, gears, pulleys, bearings, previously described IEN-8443-49.

If you write maker identify as IEN - 9073

CLAMP . . Toggle design to secure work in jigs and fixtures

Source: ERICO PRODUCTS INC.
2068-72 E. 61st Place, Cleveland 3, Ohio

Cadmium plated

Type V-1, with rating to 1,000 lb., Type V-2 and V-3 rating 2,000 lb., are new in the Caddy line of arc welding accessories. The pressure bar measures 3/4 by 3/8 in. on the smallest unit and has about 3 in. of reach in horizontal holding position, as the design is shown in the illustration.

The largest assembly employs a 1 1/4 by 1/2-in. pressure bar with a 5 5/8-in. reach. The clamp can be used in any position. The bar moves through a 90-deg. arc between open and closed. Assembly is by welding. There are no threaded fastenings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9074

NOW another new development in Micro-Fog lubrication by NORGREN

for
- SMALL AIR DEVICES
- GEAR CHAMBERS
- BEARINGS

NEW FEATURES

CONSTANT OIL LEVEL rate of oil feed not affected by oil supply.

COMPLETE VISIBILITY & CONTROL OF OIL FEED no guess work.

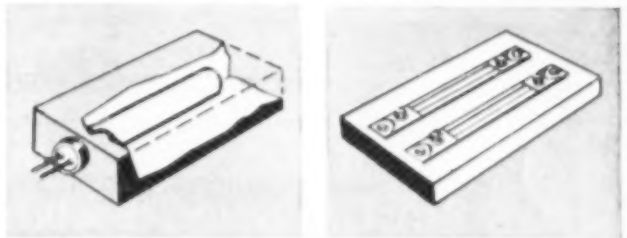
OIL FEED CONTROLLED BY AIR gives very uniform rate of oil feed.

WRITE, NOW, for COMPLETE DATA

C. A. Norgren CO.
3432 So. Elati St., Englewood
IN COLORFUL COLORADO
Valves • Filters • Regulators • Lubricators • Hose Assemblies

PIONEER AND LEADER IN OIL FOG LUBRICATION FOR 25 YEARS

If you write maker identify as IEN - 9075



Heat surfaces conveniently, safely with versatile G-E Calrod* heaters

Wrapped around, cast in, clamped on or spaced away, long-life G-E Calrod heaters give you these surface heating advantages:

Convenience—localize heat right where you want it, on surfaces of all sizes.

Accuracy—thermostatic controls assure exactly the right temperature.

Versatility—sizes, shapes, and ratings are available for almost every need.

For complete information, see your nearby G-E Apparatus Representative or Distributor. And write now for this—

FREE APPLICATION BULLETIN

GEA-5097—"Heating Surfaces with Electric Heaters" Section 720-110, General Electric Company, Schenectady 5, New York.

*Reg. Trade-mark of General Electric Co.

GENERAL ELECTRIC

If you write maker identify as IEN - 9076

WATCH OUT, ALFONSO, ONE TUMBLE'S ALL IT TAKES...

Indifference can quickly spoil a hard won reputation for quality performance. You don't take chances when you stick to a solder you know and trust . . . time-proved Kester Solder, constant in solder alloy and always consistent flux formulae.

WRITE TODAY *for your free copy of the Kester Technical Manual, "SOLDER and SOLDERING Technique."*

KESTER

SOLDER COMPANY
4211 Wrightwood Avenue • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

If you write maker identify as IEN - 9077

HIGH AND LOW TEMPERATURES

NEW BENCH-TYPE TEST UNIT

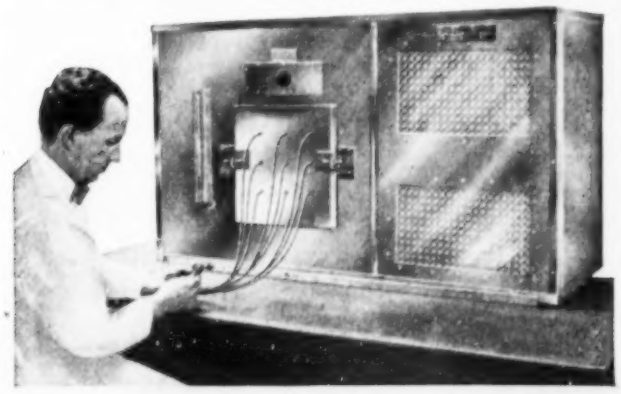
WEBBER

COMPLETE TEMPERATURE RANGE

TESTING UNITS

Combine high and low temperatures within the same cabinet with all controls self contained. Unit measures 50"x28"x20" with a testing chamber 12"x12"x12". Temperature range is from -80° F., to 185° F. Heat application is accomplished with reverse cycle refrigeration, which eliminates the hazards associated with open heating elements. A blower is provided for even distribution of temperatures and greater testing accuracy. Latch-type or hinge-type door optional. Accelerated pull-down to -80° in 30 minutes or less.

Write today for more complete information



INDUSTRIAL FREEZER DIVISION
WEBBER MANUFACTURING COMPANY, INC.
(Formerly Webber Appliance Co., Inc.)
2746 MADISON AVENUE - INDIANAPOLIS 3, INDIANA

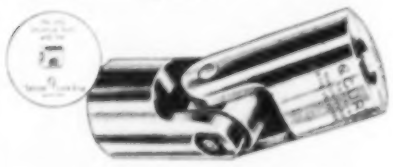
If you write maker identify as IEN-9078

Concentration for Quality

Since 1919 Curtis has concentrated on the manufacture of only one line –

CURTIS UNIVERSAL JOINTS

As a result, Curtis research, production and quality control techniques have produced the widely accepted Curtis standards — and the world's best universal joints.



ONLY CURTIS OFFERS ALL THESE ADVANTAGES

Availability – 14 sizes always in stock; bored or unbored hubs. 6" hub diameter joints or special machining to specifications.

Simplicity–fewer parts, simpler construction.

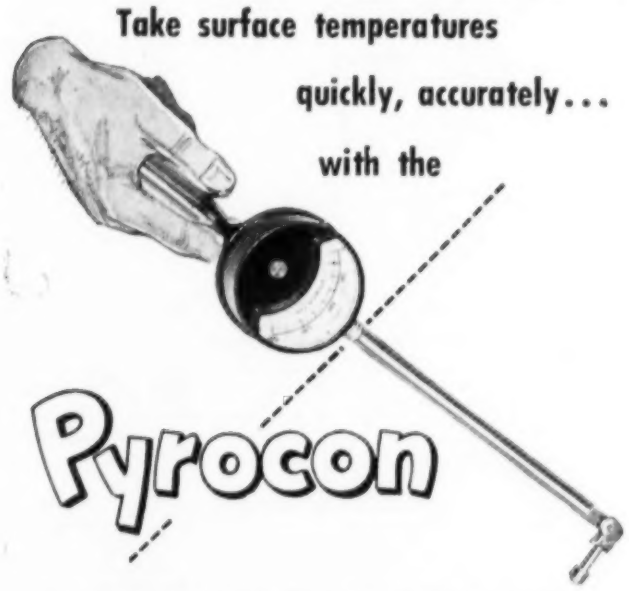
Government Tests – complete equipment for government tests in our plant.

Not sold through distributors; write direct for free engineering data and price list.

CURTIS UNIVERSAL JOINT CO., INC.
7 Birnie Ave., Springfield, Mass.
As near to you as your telephone
Not sold through distributors
Trade Mark **A MANUFACTURER OF UNIVERSAL JOINTS SINCE 1919**

If you write maker identify as IEN-9079

Take surface temperatures quickly, accurately... with the



The handy Alnor Pyrocon is unequaled for quick, accurate reading of all surface temperatures . . . whether surfaces are metallic or non-metallic, flat or curved. Accurate temperatures are easily understood on the Pyrocon's direct reading scale face . . . without interpolation or need of conversion tables. A wide selection of thermocouples and extension arms permits adaptation to many types of service. For complete details and prices, send for Bulletin No. 4257. Illinois Testing Laboratories Inc., Room 517, 420 N. LaSalle Street, Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN-9080

IMPOSSIBLE? not with ARco

MOLDED RUBBER GOODS • RUBBER INSULATED METAL PARTS

● Rubber-to-metal, dipped, form-dipped, molded, extruded and die-cut rubber components for industrial production . . . assuring electrical and thermal insulation, noise and sound abatement, corrosion and abrasion resistance . . . these products and services enable ARco Engineers in providing industry with economical solutions to "impossible" production problems.

Your product will gain in quality — you can achieve greater economy — by consulting ARco Engineers. Competent recommendations are yours without obligation.

A WEALTH OF INFORMATION—FREE! *Learn of the many advantages in quality, economy and service offered you by ARco rubber applications. Send for this valuable material today.*

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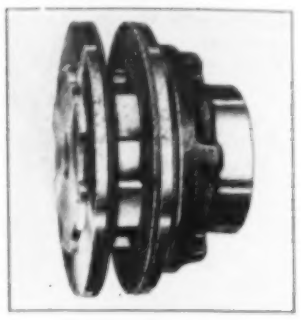
12556 Beech Rd. at P.M.R.R., Detroit 28, Mich.
ARCO RUBBER PROCESSORS
4033 HOMESTEAD ROAD • HOUSTON, TEXAS
ANYTHING CAN BE COVERED WITH RUBBER — BY ARco
MANUFACTURERS • DESIGNERS • ENGINEERS

If you write maker identify as IEN-9081

DRIVE . . Torque limiting clutch, slips when an overload is imposed

Source: **MORSE CHAIN CO.**
7603 Central Ave., Detroit 10, Mich.



No shear pin

Two steel plates are mounted on the splined steel body of this new torque limiting clutch. The plates are faced with friction lining. One is stationary with the body. The other slides in the splines and is backed by a Belleville spring and an adjusting nut that threads on the clutch body.

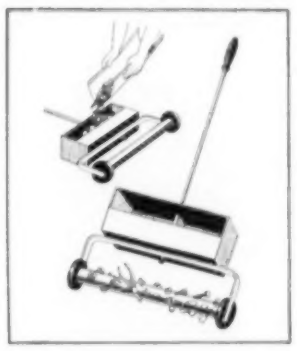
The clutch takes a chain sprocket between the two friction faces and drives it until torque rating exceeds the setting, short of 260 foot pounds. At this point the driving faces break away from the sprocket so it can come to rest with friction torque remaining at one-third to one-half of the original setting.

Three sizes are 4½, 5½ and 6½ in. in diameter with maximum ratings at 55, 121.5 and 260 foot pounds. Maximum bores are 1, 1½ and 2½ inches. Overall length is about 2⅝ to 3⅞ inches. Hub diameter is 2 to 4¼ inches. The smallest clutch will take standard ½ to ¾-in. pitch Type-A roller chain sprockets. The largest takes ½ to 1¼-in. pitch sprockets.

If you write maker identify as IEN-9082

MAGNET . . Permanent unit to pick up ferrous items from floor

Source: **MULTIFINISH MFG. CO.**
2114 Monroe, Dept. 392, Detroit 7, Mich.



Is rolled by hand

Series 60 is a new permanent magnet in a cylindrical housing with wheels at the two ends to hold it about 1½ in. above a floor. The cylinder is covered with a single wrapping of neoprene-nylon sheet. A trash box and frame complete the assembly.

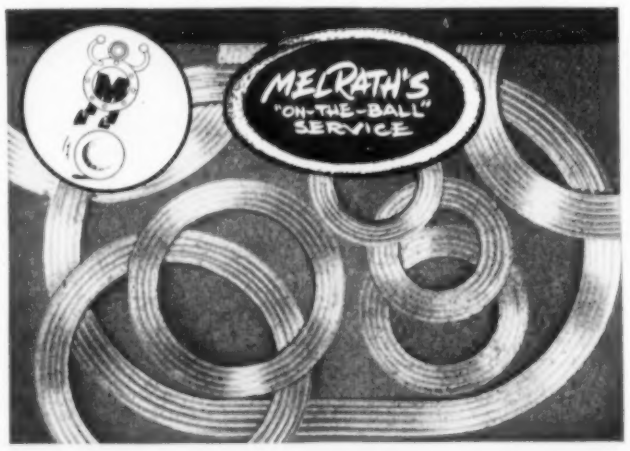
The magnet is rolled above a floor until it has become loaded with ferrous items. Then the handle is rested on the floor, the cover sheet is stripped off and the accumulation is dumped into the box. It is removed for disposal when it has been filled. Magnet width ranges from 22 to 72 inches. The smallest unit weighs 16 pounds, lists at $175.

If you write maker identify as IEN-9083

Low cost and fast delivery feature the new metal forming service offered by C. B. Kaupp & Sons, 653 Newark Way, Maplewood, N. J., following installation of a new Cincinnati Hydroform press, previously described IEN-5941-52. The press requires only a punch and nest ring. The usual expensive die is eliminated for pressed metal parts you specify.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9084



YOU NAME THE USE . . . WE MAKE THE GASKETS

Melrath engineers are specialists in designing gaskets to meet your individual needs. They assist your engineers with new gasket designs and constructions for equipment in the development stage. For your every-day needs, Melrath standard styles are the most varied in the industry . . . with fast service on special requirements. You can rely on Melrath with 44 years experience in making gaskets from every type of material possible for sealing purposes. Write for 64 page catalog covering Melrath Gaskets, Sheeting, Packing, Washers and Metal Stampings. M-901

MELRATH SUPPLY & GASKET COMPANY, INC.
Tioga and Memphis Streets, Phila. 34., Pa.

If you write maker identify as IEN-9085

INDUSTRIAL buyers have learned to depend on ANTI-CORROSIVE for fast, dependable service on all types of stainless steel fastenings. Draw on our IN STOCK inventory of more than 7,000 items and sizes and a production capacity geared to produce precision fastenings in large or small quantities, from huge ⅞" hexagon head bolts to tiny #0-80 machine screw nuts.

Write for Catalog 53V today.

anti-corrosive metal products co., inc.
castleton-on-hudson, new york

If you write maker identify as IEN-9086

THIS LITTLE VALVE CAN SAVE YOU MONEY

Your steam-heated equipment can turn out more production because of this little stainless steel valve.

It is the only moving part in a Yarway Impulse Steam Trap, and *it floats on the condensate load*. When steam is turned on, the little valve opens wide . . . discharges condensate and air *continuously* and brings the equipment *to production temperature in the shortest possible time*. After that, it passes, with a pulsating action, all condensate as it forms—*keeps a maximum, steady temperature in the equipment*.

Result to you—more production per day.

This little valve floats on the load—keeps hot steam in the equipment all the time.

Other Yarway Impulse Steam Trap advantages—small size, low initial cost, easy installation, low maintenance, stainless steel construction, and quick availability from over 200 local industrial distributors.

Over 900,000 Yarways have been sold to nearly all industries. Write for free Yarway Trap Book T-1740.

YARNALL-WARING COMPANY
122 Mermaid Ave., Philadelphia 18, Pa.

YARWAY | *impulse steam trap*

If you write maker identify as IEN - 9088

NO INSTRUCTIONS NECESSARY WITH THIS EXTINGUISHER!

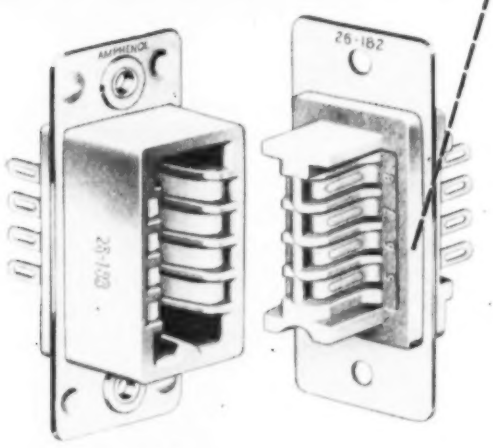
IT'S A RANDOLPH!

From Bracket to Blaze in split seconds! No valves to turn, no nozzles to adjust; just point and press your thumb and Randolph's cloud of snowy CO_2 kills fire instantly. Non-damaging, non-toxic, won't conduct electricity, deteriorate or freeze. A complete line of extinguishers. Underwriters' approved. Write for catalog to RANDOLPH LABORATORIES, INC.
6 E. Kinzie St.
Chicago 11, Ill.

If you write maker identify as IEN - 9089

AMPHENOL

BLUE RIBBON connectors



- Ease of insertion
- Ease of extraction
- Positive contact
- Positive polarization
- Good "wipe" and self-cleaning action
- Compact size

These are the features required in connectors used with plug-in type sub-assemblies—and are the qualities designed into AMPHENOL's new Blue Ribbon Connectors. For, with the use of Blue Ribbon Connectors it is possible to make and break 8, 16, 24 or 32 contacts with little more effort than is required to flip a light switch! And, along with the absolute ease of insertion and extraction, there is no sacrifice of dependable, long-lasting service under severe environmental conditions.

Write AMPHENOL for literature on the new Blue Ribbon Connectors—and discover how Blue Ribbon qualities will help your product.

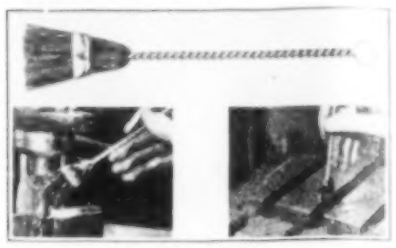
AMPHENOL

AMERICAN PHENOLIC CORPORATION
chicago 50, illinois

If you write maker identify as IEN - 9091

CLEANING . . Machinist's brush to apply lubricants and brush away chips

Source: BILTWELL BRUSH CO.
223-27 S. Church St., Rockford, Ill.



$3 per dozen

Galvanized 12-gage wire handle is equipped with horsehair bristles and a loop at the outer end with which this new Chip-Brush can be hung up. The wires at the bristle end are straight and parallel to provide a stiff backbone extending to the mid-section of the stamped ferrule. It spreads the bristles evenly and locks them and the backbone together. The brush is resistant to attack by acids and alkalis from cutting oils and lubricants. It can be applied in the slots on a machine tool table to brush out the chips. Packaging is two dozen to a box.

If you write maker identify as IEN - 9092

LUBRICATING . . Eight oil grades for general purpose industrial use

Source: SUN OIL CO.
1606-10 Walnut St., Philadelphia 3, Pa.

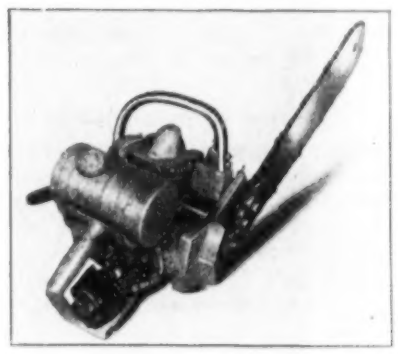
Now made in a new plant

Solnus trade names a new line of eight general purpose industrial oils with viscosity ranging from 55 to 800 ssu. at 100 deg. F. The oils are suited for use in plain or anti-friction bearings, on linkages, slides, cams and gears, in gear boxes, hydraulic circuits, diesel engines, compressors. They provide continuous protection against corrosion. They are low in carbon content and are particularly suited for use in air compressors where carbon formation is a problem.

If you write maker identify as IEN - 9093

WOODWORKING . . Chain saw, engine driven, 16 or 20 in. cutter bar

Source: LOMBARD GOVERNOR CORP.
8 Main St., Ashland, Mass.



Ball and needle bearings

In error we illustrated the company's Model-3A chain saw, in IEN-6425-53, in connection with our description of the new Model 30. The illustration in this item is actually the Model 30 with its two-cycle air cooled gasoline engine. As we stated before, the saw is available with a 16 or 20-in. bar. It weighs about 35 lb. in the 20-in. size and is for one man use. List price is about $229.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9094

A PAID NEWS ADVERTISEMENT BY THE CARBORUNDUM CO.

PORTABLE GRINDING...New "Port-A-Belt" Attachments designed to reach additional hard-to-get-at spots

Two new models of the versatile "Port-A-Belt" Grinding Attachment by CARBORUNDUM now make it possible to grind additional surfaces normally difficult to reach with portable equipment.

The two new models mount the "61" Contact Wheel on the extended arm, and the idler pulley on the tool spindle. Thus they complement the present two models where the "61" serrated-surface wheel is on the tool shaft. Equip your shop with all four efficient, low-cost attachments—enjoy the unique versatility and economy of belt grinding on such jobs as small-radius die and mold areas, and all kinds of contours, welds, edges, etc.

All four models fit nearly all standard make horizontal portable grinders—air or electric. They offer the high cutting rate and long belt life made possible by the serrated surface of the "61" Contact Wheel. They are light, easy to handle. They do not bounce or chatter.

Call your CARBORUNDUM distributor for full information—or write us at Dept. IEN 82-35

"Carborundum" and "Port-A-Belt" are trademarks of The Carborundum Company, Niagara Falls, New York

82-35

THE CARBORUNDUM COMPANY
Niagara Falls, New York

If you write maker identify as IEN - 9095

S.S.WHITE Elastoplastic

PLUGS and CAPS

Slipped into or over the ends of plain tubing, these plugs and caps protect the ends and keep out dirt and moisture.

Made of flexible Vinylite plastic, they are resistant to most oils, offer high electrical insulation, and are easily applied and stay put. For details

WRITE FOR BULLETIN P-5107

THE S.S.White PLASTICS DIVISION
DENTAL MFG. CO. Dept NP, 10 East 40th St. NEW YORK 16, N. Y.

WESTERN DISTRICT OFFICE: Times Building, Long Beach, California

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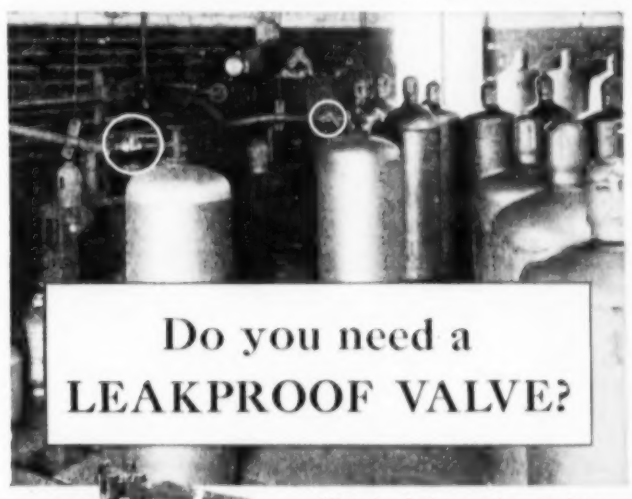
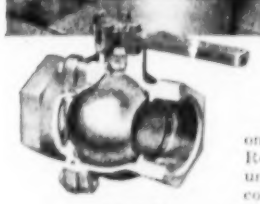
If you write maker identify as IEN - 9096





Patented

"Far ahead of any others we have used," says maintenance engineer of this propane plant.

Leakproof in a propane plant — *leakproof* on LP gas trucks — *leakproof* in a tannery — Rockwood Ball Valves are designed to operate under the roughest and most grueling of conditions. What are *your* conditions?

Remember, they're leakproof for a longer time, too — pay for themselves over and over during years of rugged service.

Other features — full, round flow; quick opening and closing; extra wear resistance. Tested and listed by Underwriters' Laboratories Inc. Write for complete details. It may pay you big dividends.

ROCKWOOD SPRINKLER COMPANY
40 Harlow St., Worcester 5, Mass.

ROCKWOOD *FULL-FLOW* BALL VALVES
THE FLOW IS AS ROUND AS THE PIPE ITSELF

If you write maker identify as IEN - 9097

JOHN CRANE CAN SUPPLY THE RIGHT SHAFT SEAL FOR YOUR APPLICATION!

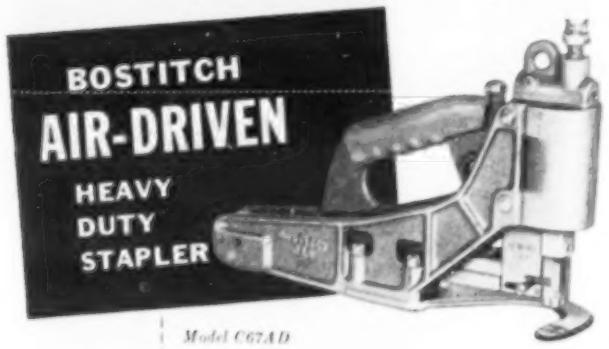
"John Crane" offers a thoroughly comprehensive line of mechanical seals to meet every use and service condition. For new or old equipment...from pumps, agitators and speed reducers to washing machines and garbage disposal units...for handling water, oil, gas, chemicals or corrosives...from vacuums up to 1000 p.s.i. pressures...temperatures to 485°F.

Free! CATALOG!

Write today for our informative, fully illustrated catalog containing concise technical data and service recommendations on all John Crane Seals. Crane Packing Co., 1815 Cuyler Ave., Chicago 13, Ill.

JOHN CRANE CRANE PACKING COMPANY

If you write maker identify as **IEN - 9098**



Model C67AD

POWERFUL Drives staples with far greater force, faster and with less effort than is possible with hand-operated machines.

FAST One-hand, trigger operation. Loads quickly with ¼", ⅜" or ½" staples.

3 MODELS Available with 3 types of clinching blade: "C" blade and "openhead" blade for sealing overlapped flaps of corrugated containers, and straight blade for ordinary stapling.

Write for Bulletin 272. BOSTITCH, 648 Mechanic Street, Westerly, R. I.

BOSTITCH®

fastens it better AND FASTER with wire

If you write maker identify as **IEN - 9099**

A. TYPE J6
B. TYPE H12
C. TYPE J98

A WEATHERPROOF, SHOCK-RESISTANT PRESSURE-VACUUM CONTROL

The Type J6 pressure and vacuum control is the basic unit of the three models shown. It is a sensitive precision built unit with weatherproof and shock-resistant features, thus may be used in exposed places on moving equipment. The J6 is for use on pressure vacuum applications requiring very close on-off differentials.

The Types shown include the J6 covered by bulletin #5-3, the H12, with external calibrated adjustment covered by bulletin #5-2 and the J98 with explosion-proof housing covered by bulletin #5-4.

Write for the bulletin you desire.

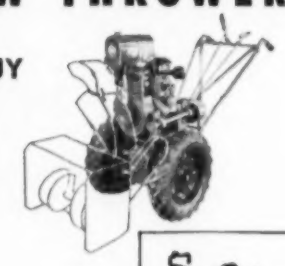
UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

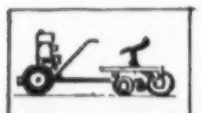
STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as **IEN - 9100**

MAXIM SNOW THROWERS

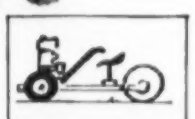
NOW A GOOD BUY FOR DECEMBER OR JULY




3-Gang 72" Mower

37" Rotary Mower

Now you can use a Maxim Snow Thrower all year long. The snow thrower unit is readily removable, leaving a sturdy 7.5 h.p. tractor on which you can quickly attach the equipment shown here. Tractor is equipped with a heavy duty transmission having 3 forward speeds and one reverse. Use this one piece of equipment for snow removal, mowing, rolling, grading, or hauling.


700 Lb. Lawn Roller

42" Grader or Snow Blade

1/2 Ton Dump Trailer

WRITE FOR DETAILS ON THIS MULTIPLE USE EQUIPMENT!

THE MAXIM SILENCER COMPANY
71 Homestead Avenue, Hartford 1, Connecticut

Name_____
Address_____

SMTSS

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Each includes identification, size of the material, information it contains so you can judge its value to you.

Identify as **IEN - 0582**

AIR CONDITIONING . . Seasonmaster central-type units with 640 to 21,000 cfm. capacity in 14 models. Selection data and dimensions in 24-page Catalog 505. McQuay Inc., 1602 Broadway N. E., Minneapolis 13, Minn.

Identify as **IEN - 0583**

BOILERS . . Water-tube steam generators are factory-assembled units that rate 5,300 to 33,000 lb. of steam per hour in 9 sizes with pressures to 400 pounds. Bulletin, "Type A", 8 pages. Superior Combustion Industries Inc., 601 Times Tower, Dept. W, New York 36, N. Y.

Identify as **IEN - 0584**

EARTH BORING . . Portable vehicle-mounted machine to bore holes in earth to 10 in. in diameter and to 200 ft. in depth with a 4½-in. auger. Bulletin, 6 pages. Mobile Drilling, Inc., 958-62 N. Pennsylvania St., Indianapolis 4, Ind.

Identify as **IEN - 0585**

BUILDINGS . . Window glazing with Plexiglas plastic is subject of new 4-page Bulletin PL-143 which recommends thickness of sheet to use to minimize breakage, includes properties and advantages of plastic glazing. Rohm & Haas Co., 220-24 Washington Square, Philadelphia 5, Pa.

Identify as **IEN - 0586**

CARBIDE PARTS . . Kennametal cemented carbides and Kentanium heat-resistant titanium carbide are described in new 12-page Technical Bulletin C-53 as to grades, properties and uses. Applications involving thermal expansion and modulus of elasticity are treated in a design suggestion section. Kennametal Inc., 100 Lloyd Ave., Latrobe, Pa.

Identify as **IEN - 0587**

CASTERS . . No kingpin is employed in Lockweld casters, one of several designs covered by 8-page Bulletin C-1. These have rubber or plastic wheels. Others have steel. Catalog information also on wheels from 2 to 18 inches. Fairbanks Co., 395 Lafayette St., New York 3, N. Y.

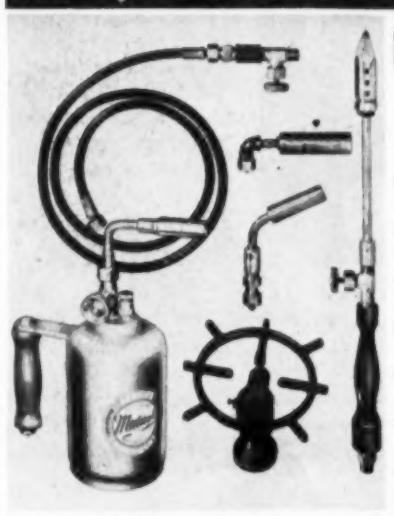
Identify as **IEN - 0588**

CASTINGS . . Standard shapes and forms available from stock without pattern charge are shown in new 20-page pocket catalog. It lists sizes on rounds, discs, gear blanks, rings, bushings, channels, angles, surface plates. Myerstown Foundry & Machine Works, Box 296-A, Myerstown, Pa.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9101**

New! all purpose PROPANE TORCH



MUTUAL B-91

- PORTABLE
- LIGHT BRAZING
- SOLDERING
- SWEATING
- MELTING
- HEATS to 2300° F.
- ICC CYLINDER

PLUMBERS, TINNERS, LINESMEN, REPAIRMEN

Use PROPANE—hot, fast, clean, safe and most convenient fuel known. This MUTUAL B-91 Torch is ready for instant use. No pumping, priming or waiting. No dirty soot. Flame won't blow out. Easy and safe to light and adjust. Over 4½ hours continuous use in each cylinder. Variety of torch tips and burners available separately or as kit shown. Send TODAY for complete details.

Mutual LIQUID GAS EQUIPMENT CO., Inc.
3600 WEST IMPERIAL HIGHWAY, INGLEWOOD, CALIF.

If you write maker identify as **IEN - 9102**

Lightweight HELIARC TORCH

is water-cooled...

FOR EFFICIENT INERT GAS WELDING AT LOW COST

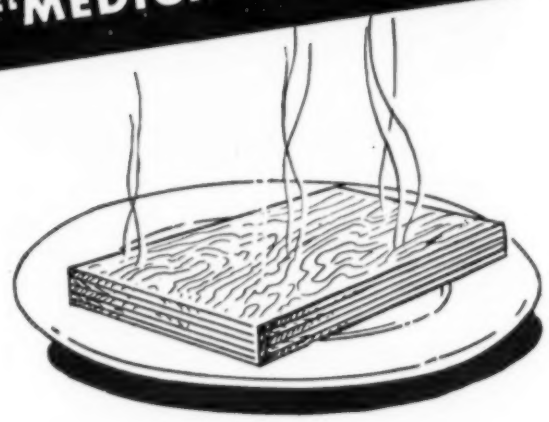
You can make high quality welds every time with this lightweight, 300 amp. HELIARC HW-10 torch. Both the torch body and power cable have all-internal water-cooling for cooler operation even when welding continuously at full capacity. Yet cleaning is easy for all water passages are straight. Electrode adjustment is quick and simple, too. No wrenches needed. And electrode stub loss is minimized by an improved water-cooling system. Call your nearest LINDE representative today for more details on the HELIARC HW-10 torch.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street UCC New York 17, N. Y.
Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

The terms "Heliarc" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.

If you write maker identify as **IEN - 9103**

Want Your PLYWOOD "MEDIUM RARE"?



We know it looks silly to compare a piece of plywood with a juicy steak, but we did it just to illustrate another AETNAPLY service.

AETNAPLY PLUS VALUES

Over 50 species of Plywoods and Veneers Foreign and Domestic.

◆

Free Engineering Service to help you use plywood to your best advantage.

◆

24-hour Shipping Service.

◆

Direct mill shipments to your exact specifications.

◆

Other woodworking products: Glues, Sealers, etc.

You can order your plywood "Just the way you want it" when you order from AETNA. As a steak is ordered to suit your *taste*— Plywood is ordered to suit your *job*.

No matter what your production requirements are, check with AETNA. Do you want it cut-to-size; machined; dip-treated; sprayed? We'll furnish it that way. Do you require odd-shaped or odd-size stock? We'll furnish it as you want it when you want it.

Send your blueprints, specification sheets, or just the general idea. We'll work it out for you and send you a quote or the order—just the way you want it.

WRITE AETNA for the RIGHT PLYWOOD

AETNA PLYWOOD & VENEER CO.
1724 N. Elston Avenue • Chicago 22, Illinois
ARmitage 6-7100

BRANCH WAREHOUSES: Grand Rapids 7, Mich.; Indianapolis 2, Ind.; Rockford, Ill.

PLYWOOD for every purpose — every industry

If you write maker identify as IEN-9105

ALL-PURPOSE SLINGS

with new Roebling Tapered Sleeve Splice . . . stronger . . . cost less!

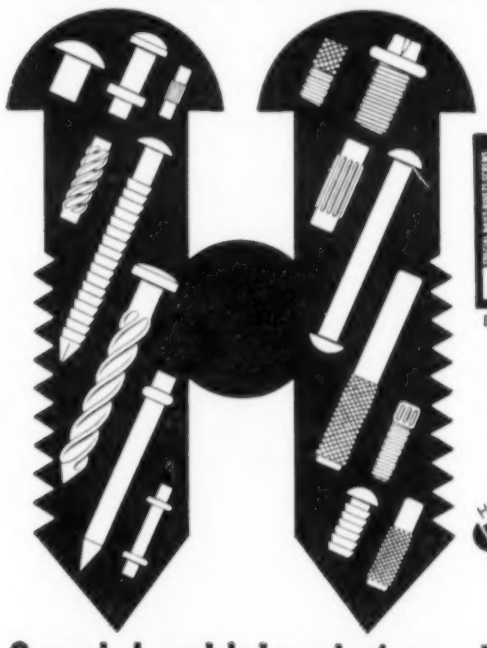
NEW ROEBLING All-Purpose Slings with the Tapered Sleeve Splice are delivered ready for the job. The unique rolled loops and tapered sleeve attachments develop full catalog strength of rope . . . cost less than ordinary tucked splices . . . save "splicing your own".

Made of Roebling "Blue Center" Steel Wire Rope, All-Purpose Slings are unsurpassed for toughness and dependability . . . flexible and easy to handle . . . come in all standard lengths and sizes. Send for full information and for the free "Sling Data Book." John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

A subsidiary of The Colorado Fuel and Iron Corporation

ROEBLING

If you write maker identify as IEN-9106



Hassall ESTABLISHED 1850

HASSALL SERVICE

Special cold headed products

. . . nails · rivets · screws . . . made to order

. . . and to your specifications in any metal. Large raw material inventory for your convenience. Send drawing—advise quantity. *Free catalog on request.*

JOHN HASSALL INC.

P. O. Box 2169, Westbury, New York

If you write maker identify as IEN-9107

FOR PHENOMENAL SAVINGS IN PLANT LAYOUT

TEM BLUE PLATE PRINTS

FROM LAYOUT TO BLUEPRINT WITH NO DRAFTING

TemPrints are outline prints on transparent film, reproducing to exact scale the standard machines in your plant or made to engineering specifications of your particular equipment . . . TemPrints are also supplied for walls, partitions, windows, office furniture and shipping equipment.

TemPrint Grids are transparent sheets cross-lined to 1/4" scale suitable for layout and floor plans.

When TemPrints are cutout and applied to the grids, the result is an accurate layout of your plant or office. Any number of duplicate prints accurately reproduced in the same size may then be made by processing through an Ozalid machine.

SIMPLY MAKE THE LAYOUT — AND THE LAYOUT WILL MAKE YOUR PRINTS

TEMPRINTS PUT THE PLAN INTO YOUR PLANT

MARINE SCALE INDUSTRIAL MODELS

Marine has specialized in scale models for many years. Marine Miniatures are accurate reproductions to scale of well-known plant machinery and equipment. All models are dimensionally accurate — may be identified instantly. A special catalog is available on request.

SEND FOR COMPLETE ILLUSTRATED CATALOG TODAY!

HARMAN ASSOCIATES

Dept. H-3, Halesite, L. I., N. Y.

NEW LITERATURE—Continued

Identify as IEN-0589

MEEHANITE CASTINGS . . Four grades of Meehanite alloy iron for machine-tool bases, crankshafts, pump housings, cams, melting pots. Properties and a comparison chart in 8-page "Meehanite Castings" bulletin. American Brake Shoe Co., 230 Park Ave., 18th Flr., New York 17, N. Y.

Identify as IEN-0590

NONFERROUS CASTINGS . . Aluminum, magnesium and bronze in sand cast, semi-permanent and permanent-mold forms, with compositions and properties on alloys handled, are in 20-page Catalog 53 with examples. Wellman Bronze and Aluminum Co., 12802 Shaker Blvd., Cleveland 20, Ohio

Identify as IEN-0591

CHAIN . . Drive and conveyor types in cast and pressed-steel design, also cast-tooth sprockets, belt-conveyor idlers. Catalog 53-110, 56 pages, includes selection notes by individual type along with specifications, list prices. Chain Belt Co., 4703 W. Greenfield Ave., Milwaukee 1, Wis.

Identify as IEN-0592

CLAMPS . . Support clamps and brackets for electric conductors, wiring harness, waveguides, tubes; dimensional drawing, metals, tolerances. Engineering Manual, 64 pages. Thomas Associates, 4605-9 Alger St., Los Angeles 39, Calif.

Identify as IEN-0593

ELECTRIC CONNECTORS . . Terminal blocks of molded plastic with screw or solder-type connectors separated by barriers. These and switches for electronic work in 20-page Catalog 14 which gives sizes, ratings. Kulka Electric Mfg. Co., 631-641 S. Fulton Ave., Mt. Vernon, N. Y.

Identify as IEN-0594

ELECTRIC CONTROLS . . Custom-built control assemblies for electric generators, motors, industrial processes, also switchgear, marine drives. Bulletin 1254-LS, 4 pages. Lake Shore Electric Inc., 235 Willis St., Bedford, Ohio

Identify as IEN-0595

POSITION CONTROLS . . How to select and apply push-pull controls with flexible or rigid casings is described in 36-page "Engineering Guide". It covers four basic types, shows recommended installation methods by line drawings. Arens Controls Inc., 2015-19 Greenleaf St., Evanston, Ill.

Identify as IEN-0596

SPECIFIC GRAVITY CONTROL . . Instrument weighs a gas, compares this weight to dry air, makes a record for control or transmitting purposes. Diagrams on how models work in 8-page Bulletin 101-R2. American Recording Chart Co., 3111-15 E. 11th St., Los Angeles 23, Calif.

Identify as IEN-0597

TEMPERATURE CONTROLS . . Instruments for furnaces, ovens, dryers and kilns. Bulletin P-1255, 12 pages, covers pyrometer controllers in round and strip-chart models, types of control action and switch action, with list prices. Bristol Co., 107 Bristol Road, Waterbury 20, Conn.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9108

CADDY ARC WELDING ACCESSORY DIV.

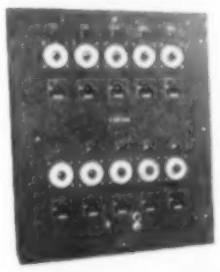
ERICO PRODUCTS, INC. 5879 E. 61st PLACE • CLEVELAND 3, OHIO

If you write maker identify as IEN-9109

EAGLE "AUTOMATISM"

FOR GREATER PROFIT IN

CHICKEN MASH



An Eagle control panel automatically proportions ingredients from ten bins onto a conveyor belt headed for a mixing chamber. Highest standards of control and faster production increase profit for the United Coop. Farmers Inc. at Fitchburg, Mass.

Eagle builds a timer or a complete control panel of the right timers to increase profit for your industrial application. Send your application problem to Eagle "know-how" engineers.

EAGLE TIMERS WILL MAKE YOUR MACHINES **AUTOMATIC**

EAGLE SIGNAL Industrial Timers

If you write maker identify as IEN-9110

for OVER-UNDER WEIGHING with TOLEDO SPEEDWEIGH®

Here's *new speed with accuracy* for you in check weighing, packaging, many other operations today . . . 3 sizes—to 5 lb., to 20 lb., to 50 lb.! Shadowfree wide-angle reading . . . accurate to 1/64 of an ounce . . . new improved knife-edge check link system . . . *exclusive* "coined" bearings for greater accuracy, longer life . . . stainless steel beam . . . enclosed levers in one-piece housing . . . choice of platters and scoops . . . many more *plus* features! Write for bulletin 1416. Toledo Scale Company, Toledo 1, Ohio.

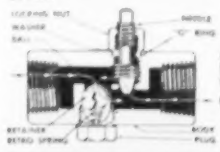
TOLEDO® Headquarters for SCALES

If you write maker identify as IEN-9111

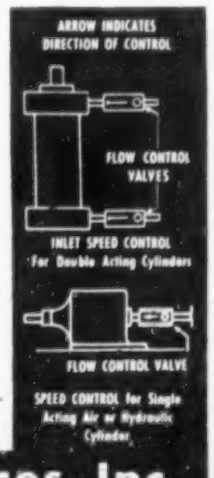
Get Easier, More Accurate Cylinder Speed Control

with **Pneu-Trol** VALVES IN AIR OR HYDRAULIC USE

Pneu-Trol Valves combine in a short, compact body, a tapered fine thread needle for extremely accurate air or oil flow control and a floating retro ball check, which permits full flow in the opposite direction. Improved "O" Gland structure seals and locks the fine needle setting when speed adjustments are made. Retro ball floats in most sensitive position to seat, requiring only a slight differential pressure to fully open or close it. Pneu-Trol Flow Valves are available in 5 female pipe sizes — 1/8" to 3/4". Valve bodies are made from brass, aluminum, steel or stainless steel.



Attractive Prices — Immediate Delivery Write for Illustrated Circular and Price List.



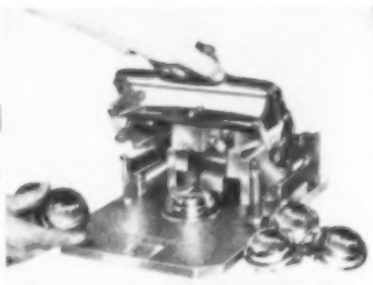
Pneu-Trol Devices, Inc.

1438 N. Keating Ave., Chicago 51, Ill.

If you write maker identify as IEN - 9112

COLOR FILL

HUB-CAPS, depressed DESIGNS, LETTERS or NUMBERS with the —



ACROPRINTER
Reg. U. S. Pat. Off.

IN OPERATION —
With an ACROPRENE die this hand operated unit picks up ink, paint or enamel and deposits it in depressed or on raised surfaces — the easy way. POWER OPERATED MODELS BUILT TO SUIT.

Write for details and prices.

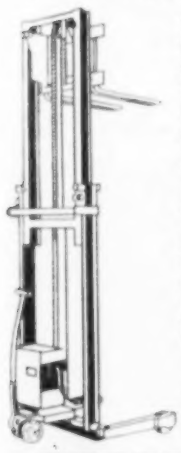
ACROMARK
THE ACROMARK COMPANY
7 MORRELL ST., ELIZABETH, NEW JERSEY

If you write maker identify as IEN - 9113

NOW small warehouses can stack ceiling-high

with the RAYMOND PALLET STACKER

Even the smallest warehouse can store goods ceiling-high with the new RAYMOND Pallet Stacker! This hydraulic truck was designed expressly for firms that have no need for larger, more costly tiering trucks.



The RAYMOND Pallet Stacker handles loads weighing up to 2,000 lbs.—stacks them as high as 115". It's a smooth-rolling highly maneuverable tiering truck that actually right-angle stacks from aisles less than 6 ft. wide.

The Pallet Stacker is equipped with a ¾ HP motor-driven pump that plugs into any 110 V socket. The pump supplies power for raising loads quickly, easily—elevating and lowering controls are conveniently located near the power unit. The hand lowering valve gives you absolute control over the speed of descent.

SEND FOR BULLETIN Get full details on RAYMOND'S new Pallet Stacker — mail coupon for Bulletin 270X today.

The RAYMOND CORPORATION
3518 Madison St., Greene, N.Y.

Please send me Bulletin 270X, describing your new Pallet Stacker.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

NEW LITERATURE—Continued

Identify as IEN - 0598

TEMPERATURE CONTROL . . Potentiometer pyrometer to 3,000 deg. F. employs electronic control. How it operates is shown by a schematic diagram in 6-page Catalog Section 50. Thermo Electric Co., 22-04 Borough Road, Fair Lawn, N. J.

Identify as IEN - 0599

CORROSION PROOFING . . Sixteen examples of plastic resin-base coatings for chemical service are presented in 8-page Folder J-743. Bakelite Co., 30 E. 42nd St., Dept. 1503, New York 17, N. Y.

Identify as IEN - 0600

CUTTING TOOLS . . Truarc grooving tool to cut recesses in housings and bores from .250 to 5.000 in. is described by 20-page Catalog GT-2-53. Drawings show a range of applications, maintenance, modifications. Waldes Kohinoor Inc., 47-18 Austel Place, Long Island City 1, N. Y.

Identify as IEN - 0601

CUTTING TOOLS . . Carbide-tipped reamers, drills, milling cutters, tool bits, blanks, centers in 84-page Catalog 53. Useful information on selection of proper carbide grade, machining speeds, sharpening instructions, drawings on how to grind chip breakers, equivalent chart. Wendt-Sonis Co., Collier & Tenth Sts., Hannibal, Mo.

Identify as IEN - 0602

V-BELT DRIVES . . New increased horsepower ratings by the Rubber Manufacturers Association are contained in 60-page revised Industrial V-Belt catalog along with selection tables, calculations, sheaves. Durkee-Atwood Co., 213-17 N. E. 7th St., Minneapolis 13, Minn.

Identify as IEN - 0603

VARIABLE SPEED DRIVES . . Electric motor with built-in transmission provides speeds from 2 to 10,000 rpm. Motor ratings are ¼ to 50 hp. Color pictures in new 16-page Bulletin F-1797 show how speed change is made. U. S. Electrical Motors, Box 2058-A, Terminal Annex, Los Angeles 54, Calif.

Identify as IEN - 0604

ELECTRONIC PRODUCTS . . Company with 32 years experience in the field offers production facilities for electronic components and assemblies. "Products and Facilities" bulletin, 16 pages, lists equipment. Insuline Corp. of America, 36-04 35th Ave., Long Island City 1, N. Y.

Identify as IEN - 0605

ELECTRONIC TUBES . . Power tubes for RF heating, transmitting and other applications, also rectifiers, thyratrons, magnetrons, uhf. triodes, vacuum capacitors. Condensed Catalog, 24 pages, gives characteristics, uses. Amperex Electronic Corp., 228-32 Duffy Ave., Hicksville, N. Y.

Identify as IEN - 0606

ENGINEERING . . Why use an outside engineering organization is answered in 10-page "Creative Product Development" bulletin along with examples of representative products from fishing reels to broaching machines. Designers for Industry Inc., 2913-17 Detroit Ave., Cleveland 13, Ohio

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9115

SEND FOR YOUR FREE COPY

NEW ACME BUSHING CATALOG

Contains America's LARGEST BUSHING Selection

Features 2 Standards
A.S.A. Standard *Plus* Acme Standard

Simplifies, speeds bushing selection. Packed with valuable data. Saves you time and trouble. Also includes liners, leader pins, dowel pins, locating jigs, etc.

Serving Industry For 28 Years

ACME INDUSTRIAL COMPANY
215 N. Laflin St., Chicago 7, Illinois

MANUFACTURERS OF DRILL JIG AND FIXTURE BUSHINGS

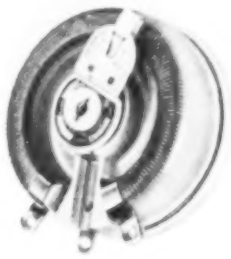
If you write maker identify as IEN - 9116

4 FINE RHEOSTATS

Announcing 3 new sizes now in production

We have added to our H-50 rheostat, the new H-75, H-100 and H-150 models. These higher wattage rheostats incorporate all the improved features.

- **Perfection in brush control, automatically adjusting tension to complete, continuous contact.**
- **Positive, smoothly-controlled spring action.**
- **Greater flexibility—no risk of backlash.**



H-150

Completely bonded with our new high-temperature-enamel; more resistant to heat; increased safety factor; higher terminal strength.

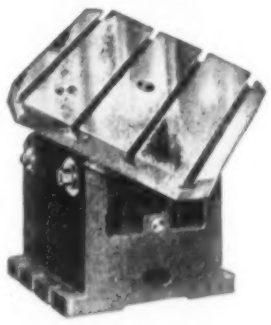
And all are designed to comply with current standards of:
(a) Military Specifications JAN-R-22.
(b) Underwriters' Laboratories.
(c) R.T.M.A.
(d) N.E.M.A.

Send today for our new bulletin.

HARDWICK, HINDLE, INC.
Rheostats and Resistors, Newark 5, N. J., U. S. A.

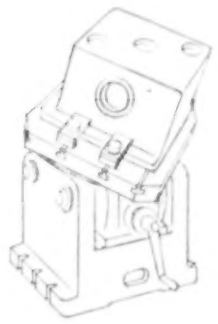
If you write maker identify as IEN - 9117

universal tables



save up to 50% of set up time on radials and boring mills

With one set up on Cincinnati Gilbert universal tables, you can drill at any angle up to 90° on five sides of a cube. Special feature: four-point support of the work in the lowered position takes strain off the worm, provides greatest possible rigidity of the work, best insurance of accuracy. Table sizes: 22" and 27" square. Height: 22". Four ¾" tee slots. Write for Bulletin 850.



THE CINCINNATI GILBERT MACHINE TOOL COMPANY
3366 BEEKMAN ST. • CINCINNATI 23, OHIO

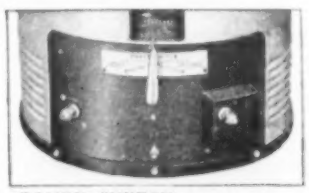
RADIALS
BORING MILLS
ACCESSORIES

If you write maker identify as IEN - 9118

NEW CONTROL SYSTEMS on M & T WELDERS for GREATER ACCURACY and CONVENIENCE

ONE-DIAL DOUBLE CONTROL PANEL eliminates plug-ins on DC WELDERS

New control system on all M & T DC Machines now makes regulation of welding current easy and positive! Simply set the electrode selector, then dial for required current . . . Welders are available in light-duty 200 amp and heavy-duty 200, 300 and 400 amp models — motor-generator or gas-driven.



RANGE SWITCH TO SPEED RANGE CHANGING ON AC WELDERS

New range switch provides rapid changing from high to low or low to high range . . . No cable leads to unplug, no connections to make . . . Case mounted primary switch permits turning off welder to save current between welds . . . M & T AC Transformers, all silicone insulated, are furnished in light-duty 200 amp and heavy-duty, industrial ratings of 200, 300 and 400 amp.

Investigate these improved DC and AC Machines as well as M & T INERT ARC WELDERS and RECTIFIERS. They're all part of a complete line—Second to none!

METAL and THERMIT CORPORATION
100 East 42nd Street • New York 17, N. Y.
MUREX ELECTRODES • ARC WELDERS • ACCESSORIES

If you write maker identify as IEN-9119

WISSCO STEEL PROCESSING BELT

Turn your products out faster, more economically in continuous straight-line production with a Wissco Belt. To order, write or call our nearest sales office.

THE COLORADO FUEL AND IRON CORPORATION — Denver, Colorado
PACIFIC COAST DIVISION — Oakland, California
WICKWIRE SPENCER STEEL DIVISION — Atlanta • Boston • Buffalo
Chicago • Detroit • New Orleans • New York • Philadelphia

1431

WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION CF&I

If you write maker identify as IEN-9120

1. Taking a section from an OK bedway

2. Making it into a "tool bit"

3. Then cutting metal with it (1045 cold rolled steel)

The Gisholt Machine Co., Madison, Wisconsin, who use Ohio Knife bedways exclusively on their ram- and saddle type Turret Lathes, made the above dramatic test for one of their customers. RESULT—another sale of a famous Gisholt Turret Lathe.

This super uniform hardness on the wear surfaces to a depth of 3/16" (64-66 Rockwell "C") is the reason why more and more OK ways, gibs, races, etc., are being specified on new equipment and used as replacements where former parts have failed. OK ways are practically wear proof assuring constant accuracy throughout the life of your machine. Enjoy with many prominent machine tool builders and users, the long wearing, supreme accuracy, super hardness of OK ways. Many sizes, shapes, etc., available, or made to your specifications.

OK wear strips are now available in welded Ampco bronze.

(Reg. U. S. Pat. Office by Ampco Metal Inc.)

Manufacturers for the Metal Working Industry of:

SLITTER KNIVES — SHEAR BLADES — ROTARY SHEAR KNIVES
HARDENED SPACERS — HARDENED WAYS — GIBS
BALL RACES — BRONZE WAYS — WEAR STRIPS

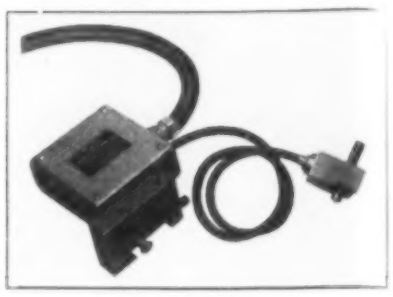
Write for comprehensive Bulletin to Dept. J

THE OHIO KNIFE CO.
CINCINNATI 23, OHIO

If you write maker identify as IEN-9122

GRINDING . . Power attachment indexes dressing diamond on a machine

Source: INDUSTRIAL DIAMOND CO
2390-94 Wolcott, Ferndale 20, Mich.



Prompt delivery

Diamond Turner is a new power driven attachment in which to mount a standard diamond dressing tool on a grinding machine. The attachment indexes the diamond in odd increments to present new cutting faces that will not repeat to form any pattern of facets. Indexing action can be tied in with the machine movements so no particular attention is required from the operator. Application can be made at existing diamond holders on most production grinding machines. Operation is on 110-volt ac.

If you write maker identify as IEN-9123

BEARING . . Bronze wear strips for boring bars, available from stock

Source: CADMET CORPORATION
P. O. Box 4631-A, Detroit 34, Mich.

Material is No. 21 Ampco

Wear strips, made of bronze in 6-in. lengths, are now available from stock, either plain or with counterbored anchor holes on 1-in. centers starting ½ in. from the ends. The length is held to 6 in. plus 0.000 and minus 0.010 inch. Five widths are 0.375 to 1.000 in., plus 0.000 and minus 0.001 inch. The same number of heights are 0.327 to 0.515 in., plus 0.010 and minus 0.000 inch. Cap screw size is No. 6 for the smallest cross section and ¼ in. for the largest.

If you write maker identify as IEN-9124

WELDING . . AC arc machine adjusts between 15 and 200 amperes

Source: ROYAL EQUIPMENT CORP.
904-8 S. Main St., Burbank, Calif.

Small but powerful

Royal-Arc is a new transformer operated welding machine that can be connected for either 110 or 220-volt, 60-cycle ac. input. The transformer assembly measures 10½ by 7 by 6¼ inches. Shipping weight is about 65 pounds.

The machine will handle electrodes measuring 3/64 to 5/32 inches. Correct setting on the transformer, for given sizes, is made by moving slides in and out of the housing. The company has prepared an instruction manual to accompany the new machine.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9125

Get this *NEW* SPROCKET CATALOG SUPPLEMENT SC-2

Complete buying information on standard Sprockets and on new line of SHOLD-A-GRIP Interchangeable Tapered Bushings and Sprockets . . . also Chain, and new Chain Breaking Tool.

ASK YOUR BOSTON Gear DISTRIBUTOR

for the new Sprocket Catalog, or write Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

If you write maker identify as IEN-9126

TO THE INGENIOUS

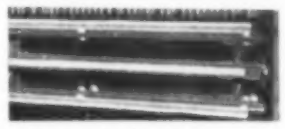
Not familiar with this

NEW INDUSTRIAL TOOL

Free Sample of Fullergript Brush Strip

What problems can you solve by adapting Fullergript to your equipment?

This brush strip can be coiled or twisted into numerous shapes. It can be formed to give intermittent or continuous brushing action. It adapts to stationary or power driven applications. How it may help *you* is a matter of your own ingenuity — plus the services of the Fuller Brush Engineering Dept. Find out what Fullergript can do by sending for a sample strip. We will also send a booklet showing its versatility. Simply write today.



Twice the brush life, because of Fullergript's continuous density, is secured on quill strippers — the machines that eliminate hand labor in removing waste thread from textile bobbins and quills.

INDUSTRIAL Fuller BRUSH CO. DIVISION

3583 MAIN STREET • HARTFORD 2, CONN.

Power driven brushes, Factory & Institutional cleaning tools, Waxes & Detergents

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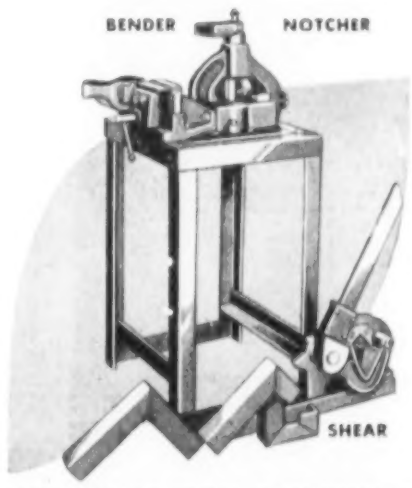
If you write maker identify as IEN-9127

WHITNEY-JENSEN

METAL WORKING TOOLS

FOR 43 YEARS



NO. 455 ANGLE IRON COMBINATION

An unusually strong and compact unit for shearing, notching, and bending angle iron. Adaptable for on-the-job work or permanent mounting in the shop. Floor space required — 21-1/2" x 26". Capacity — all sizes angle iron up to and including 2" x 2" x 1/4". *Write for our new Complete Catalog.*

WHITNEY METAL TOOL COMPANY • 288 FORBES ST., ROCKFORD, ILL.

If you write maker identify as IEN-9128

HANDY TOOL LIFTS AND PULLS EASILY

'Tugit' makes light work of thousands of jobs. It is small, portable — works fast, smoothly at any angle in tight spots and the wide-open spaces. That is why the 'Tugit' Hoist is used for everything from holding material for welding to pulling tree stumps and stretching cable.

Want to move a load 1/32"—or 1/64"—at a time? Get a 'Tugit' Hoist! It has the powerful, easily controlled action made possible by spur gears, automatic load brake and anti-friction bearings. A pull of only 40 pounds on the lever moves one ton. Non-kicking handle assures safety.

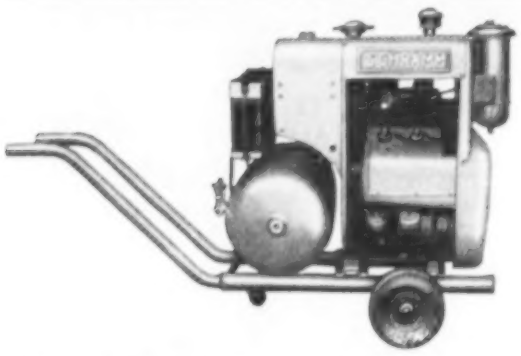
The handiness of the 'Tugit' saves time, effort, money in all kinds of repair, maintenance, and installation work. One and two-ton sizes available. Write for a copy of Bulletin No. 388 for complete details about the 'Tugit' Hoist.

'TUGIT' HOISTS

MANNING, MAXWELL & MOORE, INC.
Muskegon, Michigan

Builders of "Shaw-Box" Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves and 'American' Industrial Instruments.

If you write maker identify as IEN - 9129



Complete Engine Driven Compressor for Shop Maintenance

- TWO SIZES, 20 and 35 c.f.m. with electric push button starting.
- PAINTING — WATERPROOFING, spraying light, heavy, or roofing and caulking material.
- STEEL ERECTION, drilling, reaming, riveting, impact wrenches, grinders and many other tools.

Other Engine Driven models available in sizes including: 20—35—60—105—210—315—600 c.f.m.

WRITE FOR CATALOG S101-A

SCHRAMM, INC.
the compressor people
WEST CHESTER, PA.

If you write maker identify as IEN - 9130

LET DOLGE MAKE a scientific, factual SANITARY SURVEY of your Premises at NO cost to you!

Here's what we do—

1 Your Dolge Service Man inspects your premises and sends his complete record to our home office;

2 Our technological staff analyzes your sanitary maintenance problems. You receive, without charge or obligation, a complete and detailed report;

3 Where the use of Dolge products is indicated, and where you accept our recommendations, your Dolge Service Man "follows through" in instructing your staff and returning for periodic reinspection.

Please write for Dolge Sanitary Survey booklet.

dependable DOLGE
WESTPORT, CONNECTICUT

If you write maker identify as IEN - 9131

PLAN NOW

to be in **BOSTON** for the 8th Annual NATIONAL Industrial Packaging & Materials Handling EXPOSITION

MOST INFORMATIVE SHOW IN THE INDUSTRY

OCTOBER 20-21-22-1953
MECHANICS BLDG. • BOSTON, MASS.

YOU WILL EXAMINE — New, unusual, refined, modernized products, equipment and materials

YOU'LL GET TO KNOW — Foremost industrial packaging and materials handling men

YOU CAN LEARN — The newest—from the renowned "Short Course" in packaging and materials handling (Sponsored by Mech. Eng. Dept. of M.I.T.)

YOU WILL SEE — Interesting, instructive entries in the National Protective Packaging and Materials Handling Competition

First National Packaging and Materials Handling Show in the GREAT NEW ENGLAND MARKET

SOCIETY OF INDUSTRIAL PACKAGING & MATERIALS HANDLING ENGINEERS
ROOM 902-E, 20 W. JACKSON BLVD., CHICAGO 4, ILL.

MAIL COUPON NOW FOR FULL INFORMATION

NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

NEW LITERATURE—Continued

Identify as **IEN - 0607**

INSERT FASTENINGS . . Screw-thread inserts are coils of diamond-shaped wire that perform seven functions in securing a screw in a tapped hole. Design data, assembly tools, standard sizes and dimensions, installation suggestions and dimension tables in 22-page revised Bulletin 652. Heli-Coil Corp., 1360 Shelter Rock Lane, Danbury, Conn.

Identify as **IEN - 0608**

FELT . . 47 reference samples of wool felt in a file folder include mechanical roll felt, sheet felt, decorative felt conforming to Commercial Standard 185-52, a copy of which is included. Ask for "Reference Samples", just released. American Felt Co., Glenville & Thomas, Glenville, Conn.

Identify as **IEN - 0609**

FELT . . Design information on wool felt as lubricant wicking, shaft seals, vibration isolation is presented in new "Felt Data Book". Its 28 pages also describe basic functions, standard specifications, test methods. Western Felt Works, 4135 Ogden Ave., Chicago 23, Ill.

Identify as **IEN - 0610**

FOUNDRIES . . Automatic machine to mechanize foundry operation is described by 4-page Bulletin MM. It makes copes and drags simultaneously, sets the cores, closes the molds, puts them on a pouring conveyor, knocks them out after cooling, cleans and separates flasks ready for re-use. SPO Inc., 6452 Grand River Ave., Cleveland 25, Ohio

Identify as **IEN - 0611**

FURNACES . . Electric kilns to 2,300 deg. F. in top and front-loading designs; specifications and list prices in 20-page Catalog and Parts Manual with details on elements. L & L Mfg. Co., 134-38 Eighth St., Upland 21, Pa.

Identify as **IEN - 0612**

FUSE CLAMPS . . Kliplok clamps hold knife and ferrule-type fuses firmly in contact, prevent heating. These and other uses are shown in 8-page Broadside 5000-KB. Trico Fuse Mfg. Co., 2948 N. 5th St., Milwaukee 12, Wis.

Identify as **IEN - 0613**

PRESSURE GAGES . . Range of instruments from usual pressures to 150,000 lb. and to high vacuum in the other direction are covered in new 32-page Catalog 7004 along with controls and auxiliaries. Minneapolis-Honeywell Regulators Co., 4456 Wayne Ave., Philadelphia 44, Pa.

Identify as **IEN - 0614**

GEAR CUTTING . . Precision finishing machines for gears to 15 ft. in diameter employ a shaving method. How this method works, accuracy, condensed machine specifications are given in 8-page Bulletin V-53. Michigan Tool Co., 7169-73 E. McNichols Road, Detroit 12, Mich.

Identify as **IEN - 0615**

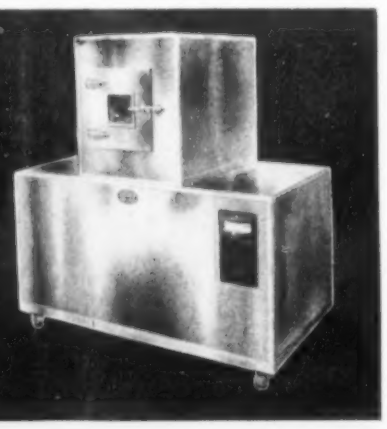
HANDLING . . Some 100 standard and special pallets, truck boxes and racks, hand trucks, trailers, dump hoppers, dockboards, truck ramps, illustrated in 32-page Catalog 31 with the idea of helping you in selection of handling equipment. Fab-Weld Corp., 3650 Richmond St., Philadelphia 34, Pa.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9132

WEBBER TRADE MARK REGISTERED

TEST CHAMBER WITH HIGH-TEMPERATURE, LOW-TEMPERATURE AND HUMIDITY



★ This Webber test unit, designed for production and experimental testing, has a temperature range from +250°F., to −100°F. The pull-down to −100°F., is achieved in 45 minutes, and can be cycled from −100°F., to +250°F., in 30 minutes. 95% relative humidity is provided at temperatures between 75°F., and 95°F. Vacuum equipment can be added to simulate high altitudes. The test chamber, provided with a moisture-proof light for illumination, is 4½ cubic feet, 20 inches high, 20 inches wide, 20 inches deep. High and low temperatures are governed by a temperature controller with scale range from −200°F., to +400°F., with a 3 degree control point differential, 1½ degrees plus and minus. The humidity is regulated by a wet and dry bulb controller. Unit size is 60" long, 45" wide, 74" high. Apertures in left side of cabinet provide for electrical cables to energize equipment being tested. Webber offers a complete line of test units for various applications.

Write for more complete information

INDUSTRIAL FREEZER DIVISION
WEBBER MANUFACTURING COMPANY, INC.
(Formerly Webber Appliance Co., Inc.)
2746 MADISON AVENUE • INDIANAPOLIS 3, INDIANA

If you write maker identify as IEN - 9133

ARO BLOW GUN

Metered air pressure!

- Throttle valve meters air exactly . . . just press for more pressure . . . or set for *fixed pressure.*
- Extremely simple design.
- Easy to use—fits your hand.
- One piece cast housing—sturdy, rugged construction.
- For wide range of cleaning jobs in shops, foundries, production, inspection, shipping, etc. Write for details.

The Aro Equipment Corp., Bryan, Ohio
Offices in All Principal Cities
Aro Equipment of Canada, Ltd., Toronto, Ont.

ARO BLOW GUN
Also . . . Air Tools . . . Lubricating Equipment . . . Hydraulic Equipment . . . Aircraft Products . . . Grease Fittings

If you write maker identify as IEN - 9134

NEW POWERED STRAP DISPENSER

speedily feeds and cuts to length

TESTED AND SIGNODE APPROVED

Signode Mill Type Power Strapping Dispenser. Made for volume users of heavy-duty strapping. Its high-speed action steps up output where large quantities of cut-to-length strapping is used—for heavy skid or freight containers—in bracing ladings in freight cars—securing over-the-highway truck shipments.

This *Signode* machine saves the time and energy of operator. Feeds 6 to 10 feet per second at touch of a button. Quick-acting, magnetic brake gives operator complete control. Saves strapping by cutting it to right length the first time. Made in separate models for ¼", 1¼" and 2" ribbon-wound coils of strapping. Easy, simple and safe to operate. Furnished with 220 or 440 motors, weight 940 lbs. For details write *Signode Steel Strapping Company,* 2611 N. Western Avenue, Chicago 47, Illinois.

THIS SEAL MEANS SIGNODE SECURITY IN SHIPPING

If you write maker identify as IEN - 9135

NEW! TOP-CLAMP KENNAMATICS give Top Performance

1 **SIMPLIFIED DESIGN**—one rugged clamp and one sturdy screw for all standard tool styles and sizes.

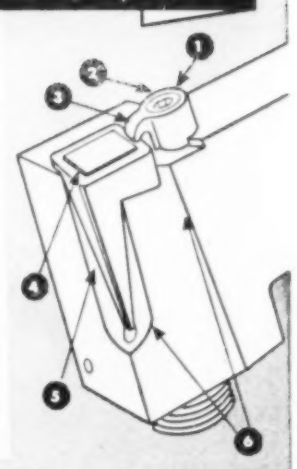
2 **EASY TO GET AT**—double end socket type screw permits release of clamp from either top or bottom.

3 **EASIER TO INDEX**—simply loosen clamping screw and clamp is up and away from insert.

4 **CHIP BREAKER**—most types can be used on insert without interference with clamp.

5 **OPEN FRONT**—provides added clearance and eliminates shank abrasion from "chip wash".

6 **STRONGER**—design provides greater rigidity. Insert is solidly backed up in direction of cutting force.



PLUS } *Extended tool life, simplified tool-setting, less grinding expense . . . Available in all "industry standards."*

KENNAMETAL Inc. LATROBE, PA., U. S. A.

If you write maker identify as IEN-9136

HANSEN

TWO-WAY SHUT-OFF COUPLING

Shuts Off Both Sides of Line

Series HK

Both ends of line are positively sealed when you disconnect a Hansen Two-Way Shut-Off Coupling. No tools required. Identical valves in Socket and Plug permit free flow of gas or liquid when Coupling is connected – practically eliminate spilling of liquid or escape of gas when disconnecting Coupling. Does not depend upon line pressure to seal. Sizes 1/8" to 1". Female pipe thread connections.

To connect, merely pull back sleeve, push Plug into Socket.

To disconnect, pull back sleeve. This unlocks Coupling – immediately and automatically seals both ends of line.

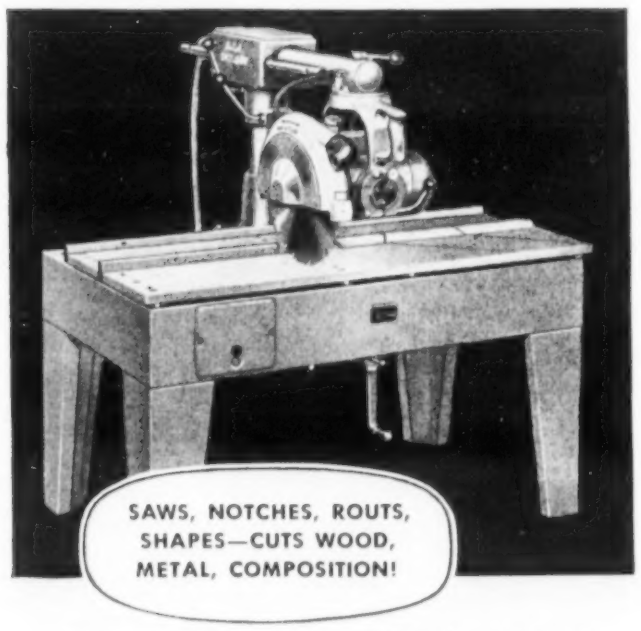
Also Straight-Through and One-Way Shut-Off Couplings. Write for catalog.

THE HANSEN MANUFACTURING COMPANY
4021 WEST 150th STREET • CLEVELAND 11, OHIO

If you write maker identify as IEN-9137

LAST WORD IN PRODUCTION CUTTING

SKIL Radial Saw



Here's one of the most versatile tools to step up production in your factory. Actual production experience proves SKIL Radial—with retractable arm—far better than stationary arm type of radial saw. Area above work table is free from obstruction. Every adjustment can be reached and indexes read from front of work table. No ducking or dodging around the arm.

The SKIL Radial is of rugged construction. Adjustments lock saw in position for greatest accuracy on production sawing. Adjustments made instantly for *all* types of cuts, routing and shaping. Arm designed to prevent accumulation of resins and sawdust.

There's a SKIL Radial Saw to meet every requirement

New design features make a complete construction workshop—easy to set up for all cuts. Easily operated with speed and precision by one man.

SKIL Radial Saws are available in 2, 3, 5 and 7½ h.p., with 14" and 16" blades, 1 or 3 phase, all voltages, manual or magnetic control.

See Your Distributor for Complete Information or Call Your Nearest SKIL Factory Branch

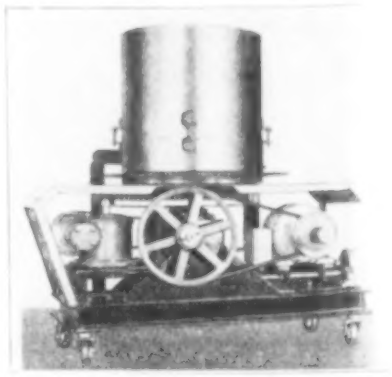
Made only by SKIL Corporation
formerly SKILSAW, Inc
5033 Elston Ave., Chicago 30, Illinois
SKIL Factory Branches in 34 Principal Cities
In Canada: Skiltools, Ltd., 3601 Dundas Street West, Toronto 9, Ontario

SKIL PORTABLE TOOLS

If you write maker identify as IEN-9139

FEEDING . . Plow type machine to handle soft sticky materials

Source: **PULVA CORPORATION**
560 High St., Perth Amboy, N. J.



Available to rent

New pilot size has been added to the company's Com-Bin feeder line, previously described IEN-12951-51. The pilot assembly has a bin capacity of 2½ cubic feet. The bin measures 17 in. in diameter by 18 in. in height. Drive is by a ½ hp. totally enclosed motor for operation on 110-volt 60-cycle a.c. A variable speed transmission can be set for 0.6 to 14.6 rpm. on the machine's rotating plate as material requires.

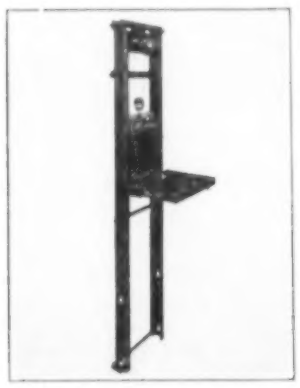
The plate mounts beneath the cylindrical bin and carries it on a spider to provide a gap between the lower bin edge and the plate. A plow is inserted through this gap to shear material from the bottom of any soft sticky mass that is dumped into the top of the cylinder. Height of the sheared ribbon depends on the clearance between the cylinder and the plate. Width of the ribbon is determined by the position of the plow.

The new unit has been designed for rental in test operation. It is shipped in a special packing case, one side of which is hinged at the bottom. The caster mounted machine can be rolled out and replaced without need for crating. Standard construction, of the parts coming in contact with the work material, is in No. 304 stainless steel.

If you write maker identify as IEN-9140

ELEVATOR . . Platform lift to move materials between floors

Source: **RAPIDS-STANDARD CO.**
342 Rapistan Bldg., Dept. LV, Grand Rapids 2, Mich.



Push button control

Vertical Lift is a new platform, motor driven hoist, and uprights assembly to install between floors in a plant. It will raise or lower an 800-lb. load at 15 fpm. or a 300-lb. load at 30 feet per minute. The platform lowers to within 6½ in. of the floor level. It rises to a maximum height of 20 feet. Micro switches limit the action.

The motor driven hoist mechanism is mounted at the top of the uprights. It is an enclosed unit available with a specified motor. The platform measures 24 by 30 in. in standard design. It rides on four V-trac wheels enclosed in the steel channel side frames. A safety lock prevents the carriage from dropping if the cable breaks.

If you write maker identify as IEN-9141

PLASTIC . . Liquid casting resin cures solidly at room temperature

Source: **HOUGHTON LABORATORIES INC.**
320-24 Bush St., Olean, N. Y.

Technical data upon request

New series of pigmented and filled modifications of the company's Epoxide Type plastic Hysol 6020 is now available to make castings that will cure at room temperatures, following addition of selected catalysts. The plastic has been developed for use in electronic parts manufacture. It provides excellent electrical insulating properties, resistance to impact.

These properties are valuable in casting, plotting and encapsulating electronic components and assemblies. Pigmentation provides nine standard colors. The small amounts of inorganic pigments, that are added to the base, do not materially change the original properties of the compound.

If you write maker identify as IEN-9142

CORROSION PROOFING . . Powder dissolves in water, applies on steel

Source: **ENTHONE INC.**
440-44 Elm St., New Haven 11, Conn.

Packaged in 100 and 300 lb. drums

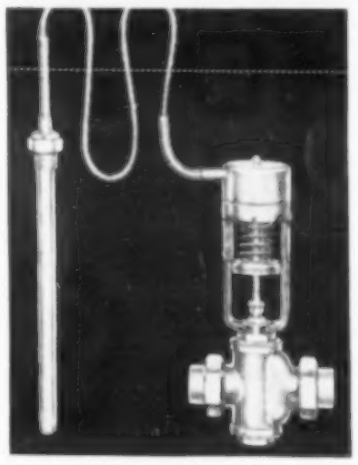
One ounce of the new Compound NR-31 alkaline powder in a gallon of water makes a solution for application on steel work pieces after cleaning, pickling, descaling, burnishing, tumbling. It coats work dipped into it with an invisible film that will protect finished steel surfaces against corrosion in 100 per cent humidity for several weeks.

Surface active materials in the formula promote rapid drying and result in uniform distribution of the compound over the work. Water will wash the film off immediately.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9143

Temperature Regulator gives you a plus!*



**Has "Fail-Safe" Feature—Protects against accidental overheating*

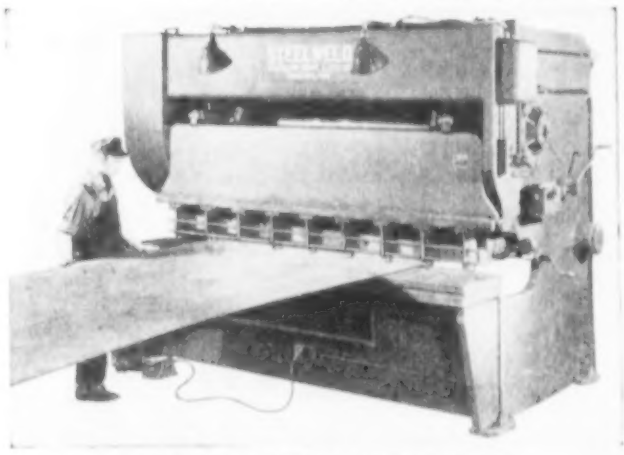
● Sylphon Safety Type Regulator No. 926 gives constant, positive temperature control. *And this, too;* if connecting tubing or bulb is accidentally injured, causing loss of thermostatic charge, Regulator *fails safe*...control valve *closes* automatically. No overheating and consequent damage to products in process. No. 926 also available with reverse-acting valve for cooling control; control valve will *open* if thermostatic charge is accidentally lost. Fin type bulb supplied for controlling temperature of air and gases. Ideal for control of chemical heating tanks, engine and compressor cooling, heating water for showers, etc. Write for Bulletin PN-D.

Robertshaw-Fulton CONTROLS COMPANY
KNOXVILLE 1, TENN

FULTON SYLPHON DIVISION

Temperature Controls • Bellows Devices • Bellows Assemblies
Canadian Representatives, Darling Brothers, Montreal

If you write maker identify as IEN-9144



ALL STEELWELD SHEARS *Controlled Electrically!*

Convenient electric foot-switch operation is standard for all Steelweld *Pivoted-Blade* Shears. The switch can be slid around floor to wherever handiest. It eliminates tiresome leg lifting required for usual mechanical foot treadle.

Steelweld Shears are built in all sizes for plate to 1-1/4" thick. Get the facts on these truly modern machines.

Send for free Catalog No. 2011

THE CLEVELAND CRANE & ENGINEERING CO.
4209 East 282nd St., Wickliffe, O

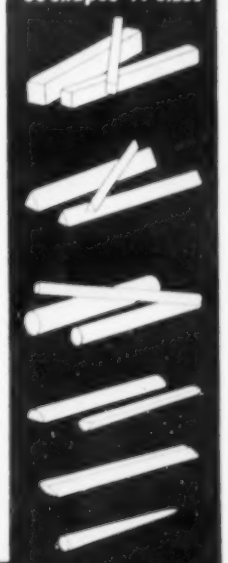
STEELWELD SHEARS

If you write maker identify as IEN-9145

For close tolerances...Machinists, tool and die makers insist on

INDIA & HARD ARKANSAS Oilstone Files

35 shapes 97 sizes



• For really close work on dies, tools, and parts, and for such jobs as deburring, radiusing, and chamfering, there is nothing finer than an INDIA or HARD ARKANSAS Oilstone File. Experts always have these famous files on hand. They cut fast and accurately to amazingly close tolerances. And there's a size and shape to fit any job. INDIA Oilstones come in three grits: Coarse, Medium and Fine. For the ultimate in superfine finishes, get HARD ARKANSAS Files. You'll have the finest available when you order these files from your distributor.

Get this helpful book on the advantages of hand stoning cutting tools. Address Behr-Manning Corp., Troy, N. Y., Dept. IEN-8.

® * Trademarks

BEHR-MANNING division of NORTON Company
COATED ABRASIVES · SHARPENING STONES · PRESSURE-SENSITIVE TAPES

If you write maker identify as **IEN - 9146**

No Shut-Down For Filter Cleaning!

Cuno's exclusive "comb-clean" action provides complete cleaning of the strainer element on the job—*without stopping fluid flow.*

Just an occasional rotation of the handle does the cleaning. The strainer element turns through the cleaner blades, combing all dirt from the strainer surfaces. Dirt particles fall to bottom of housing, where they can be drained off periodically.

As for application, remember, if you can pump it, Cuno can filter it. Write for more facts about the modern AUTO-KLEAN strainer. Cuno Engineering Corp., Dept. 6917A, Meriden, Connecticut. A.3.17

If you write maker identify as **IEN - 9147**

Here's Efficient, Dependable Air Supply

JOY WL-80 "UNITAIR" COMPRESSOR

★ A size for *every* standard motor rating
★ Force-feed lubrication
★ Small floor-space requirements
★ 81 to 640 CFM
★ Two Stage . . . Air cooled

And here's FREE HELP!

Bulletin A-56 . . . new, with 16 fact-filled pages and a Selector Chart. Write for it to select the right compressor for your needs.

Consult a Joy Engineer W&D 13086

JOY MANUFACTURING CO.
General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO

If you write maker identify as **IEN - 9148**

NEW SBS WATERLESS WASHSTATION*

"brings the washroom to the worker"*
for only $52.50 per unit
(F.O.B. Saginaw, Mich.
Towel Dispensers not included)

SBS Waterless Washstations are complete units for hand washing on the job. Because they dispense SBS-30 Waterless Skin Cleanser, these Washstations require no plumbing . . . SBS-30 is simply rubbed on the hands and wiped off along with all the soil.

SBS Waterless Washstations —

- **In Trouble Spots** — Avoids workers use of irritating, harmful solvents. Quickly and safely removes tars, greases, paints, varnishes and other hard-to-remove soils.
- **On the Production Line** — Cuts to a minimum costly interruptions for hand washing.
- **Actually Earn You Money** — By eliminating one unnecessary trip per day for hand washing by only 10 men, you can save up to $720 annually.

Fill out and mail the coupon below for complete information about SBS Waterless Washstations and our 30-day no-risk money back trial offer.

*Trademark 92-A

SUGAR BEET PRODUCTS CO., Dept. 7E, SAGINAW, MICHIGAN
Sirs: Please send me full information about the new SBS Waterless Washstation and your 30 day no-risk money back trial offer.
NAME
TITLE
COMPANY
CITY ZONE STATE

SUGAR BEET PRODUCTS CO. • Saginaw, Mich.
Chemical By-Products Division

NEW LITERATURE—Continued

Identify as **IEN - 0616**

HANDLING . . Hopper and stand to feed parts from a drop-bottom lift-truck box is one of several material-handling items presented in 12-page "Work-O-Matic" bulletin. Truck boxes, trays are others. Union Metal Mfg. Co., 1439-34 Maple Ave. N. E., Canton 5, Ohio

Identify as **IEN - 0617**

HEATING ELEMENTS . . Electric strip heaters, immersion heaters, cartridge and band units, radiant and finned heaters, thermostats and controls, melting pots, hot plates, branding irons. Catalog 53, 16 pages, gives wiring diagrams. Waage Electric Inc., 725 Colfax Ave. Kenilworth, N. J.

Identify as **IEN - 0618**

UNIT HEATERS . . Gas-fired suspended type from 70,000 to 178,000 btu. in fan, blower and duct-mounting designs, all with cast-iron heat exchangers. Bulletin 543, 6 pages. Dravo Corp., Liberty & Fifth Aves., Pittsburgh 22, Pa.

Identify as **IEN - 0619**

HOSE COUPLING . . Installation instructions on the company's Le-Hi quick-disconnect coupling for air, steam, gas lines, particularly from the standpoint of safety. Booklet, "Dangers under Pressure", 8 pages. Hose Accessories Co., 17th St. at Lehigh Ave., Philadelphia 32, Pa.

Identify as **IEN - 0620**

HOSE COUPLING . . Quick-disconnect design comes in self sealing and standard types, ⅛ to 3 in. sizes. Pressure ratings, compact dimensions, weights are given in 8-page Industrial Coupler Catalog VP-83 on the Hi-Flow line. Snap-Tite Inc., 203 Titusville Road, Union City, Pa.

Identify as **IEN - 0621**

ELECTRICAL INSULATION . . Tubing and sleeving of braided cotton, rayon, nylon, glass with silicone, varnish or other coating and impregnants. Twenty-five sample lengths show constructions and colors in new 8-page "Varflex Sample Folder". Varflex Corp., 306 N. Jay St., Rome, N. Y.

Identify as **IEN - 0622**

JACKS . . Lever, screw and hydraulic models for such jobs as pulling gears, pushing ties from under rails, tensioning wire, leveling machinery, lining up structural members, anchoring a conveyor drive, bracing timbers. Catalog 53, 36 pages, shows uses, gives specifications. Templeton Kenly & Co., 653 Gardner Road, Broadview, Ill.

Identify as **IEN - 0623**

LAYOUT . . Scale-size templates of plant equipment are employed with a similar-scale grid-marked sheet to plan a layout. Bulletin, "Modern Methods", 32 pages, shows steps involved, materials available, what a finished job looks like, and how it looks with three-dimension models. F. Ward Harman Associates, 253 New York Ave., Dept. N-2, Halesite, N. Y.

Identify as **IEN - 0624**

BUCKET LOADERS . . Machines on wheels or crawlers to pick up cinders, gravel, snow, bulk material and deliver it into a waiting truck at 3 to 4 cu. yd. per minute. Bulletin 531, 8 pages. N. P. Nelson Iron Works Inc., 818-22 Bloomfield Ave., Clifton, N. J.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9149**

TEETH with lasting cutting accuracy

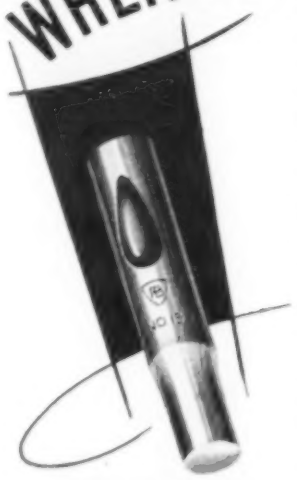
The tooth design of Brown & Sharpe Cutters gives you cleaner cuts . . . and their stamina "stretches out" sharpening dates. The Brown & Sharpe line covers all types and sizes, from plain milling cutters and end mills, to metal slitting saws and special form cutters. Write for illustrated catalog and select *exactly* the cutters you need. Brown & Sharpe Mfg. Co., Providence 1, R. I., U.S.A.

BUY THROUGH YOUR LOCAL DISTRIBUTOR

Brown & Sharpe

If you write maker identify as **IEN - 9150**

WHEN R-B Punches Are Used



R-B Engineering Service Is Available for Your Tough Piercing Problems.

What are your piercing or forming requirements—standard or unusual shapes—small or large holes—steel or special alloys — thin or thick metals? There is either an R-B punch in standard shapes and sizes or R-B will manufacture special punches, die buttons and retainers to your specifications that will provide more efficient piercing operations.

Many hole-making applications, formerly requiring drilling or some other costly means, can now be done with R-B interchangeable punches. If you have thought your piercing jobs too tough for interchangeable punches, it will pay you to investigate the wide application potential of R-B standardized equipment.

RICHARD BROTHERS PUNCH DIVISION
ALLIED PRODUCTS CORPORATION
DEPT. 73 • 12615 BURT ROAD • DETROIT 23, MICHIGAN

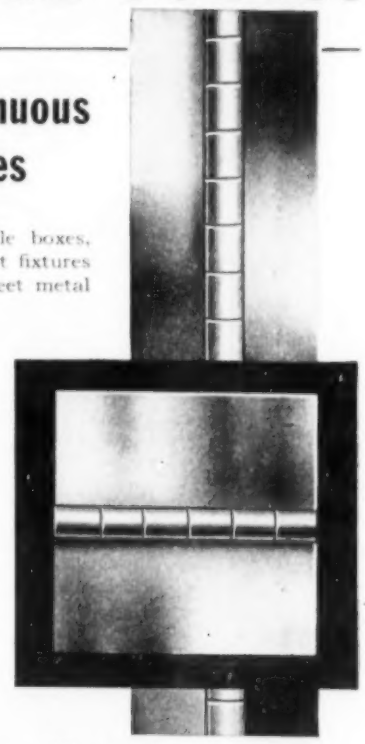
Also Produced in **OTHER ALLIED PLANTS**
SPECIAL COLD FORGED PARTS • STANDARD CAP SCREWS
PRECISION GROUND PARTS • SHEET METAL DIES MADE OF FERROUS ALLOYS, ZINC ALLOYS OR PLASTICS

If you write maker identify as **IEN - 9151**

CUT HINGE COSTS!

—with—

STOCKER Continuous and Butt Hinges



Ideal for tool and tackle boxes, metal cabinets, fluorescent fixtures and other light-gauge sheet metal applications.

Stocker Hinges are fabricated from .035 and .043 Cold rolled steel, stainless steel, brass and aluminum.

Quarter-inch joints. May be had in specified lengths up to eight feet and in widths from ¾-inch to 2 inches. Perforating, trimming and other secondary operations as desired.

Write for samples, prices and the complete Stocker catalog.

The STOCKER HINGE Mfg. Co.
118 North Jefferson Street • Chicago 6, Illinois
Hinges for Sheet Metal Applications

If you write maker identify as **IEN - 9152**

HOW TO WELD CONTACTS

WELDPOWER*

Cuts Rejects
Increases Production
Eliminates Costly, Less Satisfactory Methods

However you now make them, look into the advantages of assembling contacts and relay tips with Raytheon stored energy WELDPOWER. Designed especially for welding light gauge ferrous or non-ferrous metals and dissimilar combinations, WELDPOWER provides the precision control essential for a strong, permanent bond. Because rejects go down as production goes up, WELDPOWER Units quickly pay for themselves in a better product at lower cost.

Investigate the many advantages of joining any small precision part with Raytheon Condenser WELDPOWER. Control units are available in 3 sizes with appropriate WELDPOWER Heads. Send sample parts or write for details. Address Dept 6270-IN-8.

*Reg. U.S. Pat. Off.

RAYTHEON
Excellence in Electronics
RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago
New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL DIVISION, 19 RECTOR STREET, NEW YORK CITY

If you write maker identify as IEN-9153

CAL-WIC WIRE CLOTH

THE RIGHT WEAVE

• • • for every industrial requirement including screening, filtering, grading, cleaning and numerous other types of processing.

THE RIGHT WEIGHT

• • • precision-fabricated for long-lasting dependability and economy.

THE RIGHT METAL

• • • for highest resistance to chemical action, moisture, corrosion, abrasion and extremes of temperature.

For additional information write or phone our nearest sales office.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel and Iron Corporation, Denver, Colorado
PACIFIC COAST: Pacific Coast Division, Oakland, California

CAL-WIC INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN-9154

For Economy . . . Long Life . . . Dependability

UPTEGRAFF

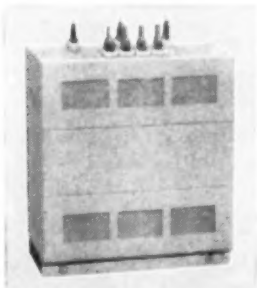
DRY TYPE

Transformers

Installation goes faster and money is saved through the use of Uptegraff Dry Type Transformers. Because they are safe to install anywhere and are light in weight, they do not require special rooms, enclosures or heavy supports. Consequently they can usually be located near the load center, eliminating long expensive bus runs, and improving the performance of the electrical equipment they serve.

POWER

Made in sizes up to 3000 KVA, 15 KV, Uptegraff Dry Type Power Transformers are rugged and dependable. Well-ventilated coils and integrated design of core and coil assembly assure top level performance.



DISTRIBUTION

Uptegraff Dry Type Distribution Transformers can be installed near the load center, with complete safety and greatest economy. Made in all commercial sizes and ratings

SPECIAL DESIGNS
for indoor substations

Furnished in standardized sizes and ratings from 112.5 KVA to 2000 KVA, 5 to 15 KV. Enclosed in sturdy, well-ventilated steel enclosure if desired, or as core and coil unit for building into a complete substation assembly.

WRITE for complete information on these or other Uptegraff Transformers—Power, Distribution or Specialty.

R. E. Uptegraff Manufacturing Co.
Thomas Street, Scottdale, Penna.

If you write maker identify as IEN-9156

SWITCH . . Front operated design, 200 amp., for 250 and 600 volt ac.

Source: FEDERAL ELECTRIC PRODUCTS CO.
55 Paris St., Newark 5, N. J.

Conserves space

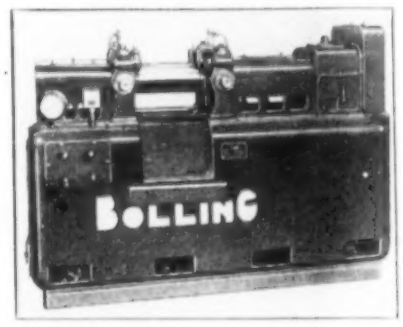
New fuse **holder**, with its pressure spring unaffected by the fuse heat, characterizes the design of this new 200-amp. front operated assembly in the company's Noark safety switch line. High pressure lever action provides minimum contact resistance. Cool operation is maintained by the use of only two joints to each pole, both under heavy external spring pressure. The new switch supplements the front operated design, which is now available in 30, 60, 100 and 200-amp. ratings. Additional sizes, to 1,200 amp., are available with conventional side operation.

All parts of the new switch are removable from the enclosure and can be ordered from spare parts lists in the event of accidental damage. Construction includes an insulated cross bar fitted beneath the blades so the switch cannot fail to open when the handle is moved to "off" position. A new arc muffler is employed on 250-volt assemblies. The patented Rolarc arc snuffer is used on assemblies over 250 volts.

If you write maker identify as IEN-9157

PROCESSING . . Two roll mill for plastics and rubber, 6 in. rolls

Source: STEWART BOLLING & CO.
3188-92 E. 65th St., Cleveland 27, Ohio



For laboratory use

Chromium plated rolls, measuring 6 in. in diameter by 13 in. in face width, are mounted in Timken anti-friction bearings with flood lubrication. The rolls connect through universal joints to the 7½-hp. gear motor drive to permit opening adjustment and eliminate the need for external connecting gears. Gearing in the machine is enclosed and employs helical teeth to minimize noise and vibration. Piping for steam or water is built in. Construction includes stainless steel guides, push pull type thrust screws and knee-operated safety switches.

If you write maker identify as IEN-9158

FURNITURE . . Work bench top made of laminated edge grain maple

Source: INDUSTRIAL BENCH & EQUIPMENT MFG. CO.
98 South St., New Britain, Conn.

Clean work surface

Four widths range from 24 to 42 in. and seven lengths are from 3 to 10 ft. in this new standardized maple work bench top. The company offers it alone, in addition to the complete work table assembly, previously described IEN-385-53, without the legs.

The laminations are made of kiln dried maple joined true, glued and reinforced with bolts assembled in counterbored plug holes. The top surface is sanded and finished with clear lacquer or shellac. The edges are similarly treated. A black wood sealer is applied on the bottom.

If you write maker identify as IEN-9159

COUNTING . . Hand held device reads to 1,000 linear feet and fraction

Source: RYTEL ELECTRONICS MFG. CO.
9818-22 Irwin Ave., Inglewood, Calif.

Particularly for wire

Any material that can be placed between the guides and pulled through this new Tel-Ryte length counter, or on which the counter can be applied and moved along one edge, in thickness to ⅜ in., can be counted with this new unit. It will total any length from 1 in. to 1,000 feet. The counter will either add or subtract. A reset knob turns the wheels back to zero to make a new start.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9160

BROWNHOIST BUILDS BETTER BUCKETS

• BUY DIRECT FROM FACTORY FOR LESS

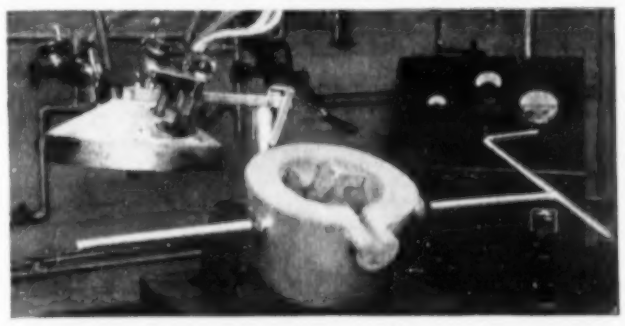
• ROPE REEVE, LINK TYPE POWER WHEEL

• WRITE FOR CATALOG

INDUSTRIAL BROWNHOIST CORP.
BAY CITY, MICHIGAN

156

If you write maker identify as IEN-9161



For lab melts, pilot plant and small production . . .

The PT POT TILTING Furnace

This Detroit Electric Furnace has been specially developed to produce small melts of any metal with ease, economy and speed. 15-pound capacity pot can be used as a crucible or tilted to pour directly into molds. Roof lifts and swings for easy loading. Complete with controls. Full information on request.

WRITE FOR DETAILS

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: In BRAZIL—Equipamentos Industrias "Eisa" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castellvi Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Casco, S. de R. L. Atenas 32, Despacho 14, Mexico City, D. F. EUROPE: ENGLAND, Birlec, Ltd., Birmingham.

If you write maker identify as IEN-9162

DO YOU WANT THE FULL, MONEY-SAVING *Facts* ABOUT DOCKBOARDS?

THIS NEW FACTS FILE GIVES THEM TO YOU

The new Magcoa **Facts File** is full of facts like these that you ought to have before you invest in a bridgeplate for your loading dock—

- **The actual costs of dangerous makeshift plates**
- **What other companies learned . . . *the hard way***
- **Why sixty multi-plant national companies standardized on Magcoa Dockboards**
- **What your local Magcoa Representative knows about *your* dock**

The new Magcoa ***Facts File*** is based on a study of what smart buyers demand (and get), gives you tips on *net* costs, talks in dollars and cents, specific facts . . . from your viewpoint. Write today for your free copy.

MAGNESIUM COMPANY OF AMERICA
MATERIALS HANDLING DIV. • EAST CHICAGO 14, IND.

If you write maker identify as IEN - 9163

Coppus Airplane Type Heat Killer cools large areas — restores efficiency

HEAT KILLER on the job in drop forge plant.

Steel mills, drop forge plants, foundries and other plants with hot working conditions find this Coppus Heat Killer increases worker efficiency . . . at reasonable cost. *A single fan cools large areas.*

Other types also available for cooling furnaces, electrical equipment, for driving out gases, drying out products, drawing out fumes. Write now for detailed information. COPPUS ENGINEERING CORPORATION, 148 PARK AVENUE, WORCESTER 2, MASSACHUSETTS.

ANOTHER COPPUS "BLUE RIBBON" PRODUCT

If you write maker identify as IEN - 9164

You Just Can't File Away These Problems . . .

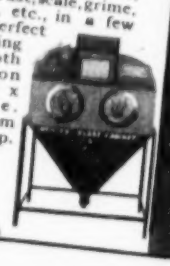
BLAST CLEANING

. . . of bridges, buildings, tanks, structural work

Pangborn Blast Cleaning Machine—Cleans tanks, bridges, structures quickly and economically. Ideal for maintenance and other jobs, such as removal of dirt, rust, etc. Six sizes, stationary or portable, $188 and up.

. . . of small castings, forgings, stampings, heat treated parts.

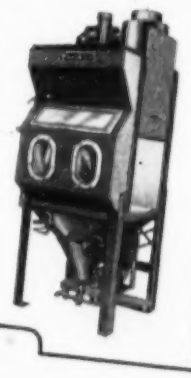
Pangborn Blast Cabinet—Saves time and money in cleaning small metal parts, removing rust, scale, grime, old paint, etc., in a few seconds. Perfect for producing clean, smooth surfaces on pieces 60" x 35" in size. Models from $319 and up.



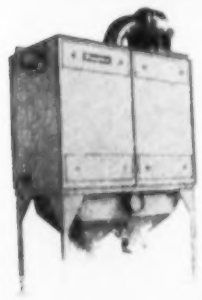
PRECISION FINISHING

. . . of molds, dies, tools

Pangborn Hydro-Finish Cabinet—Removes scale and directional grinding lines . . . holds tolerances to .0001" and prepares surfaces for painting or plating. Liquid blast reduces costly hand cleaning and finishing of molds, dies, tools, etc. Models from ..... $1410 and up.



CONTROLLING DUST



. . . at the source of origin

Pangborn Unit Dust Collector—Traps dust at the source. Reduces maintenance costs . . . keeps plant clean and improves community relations. Allows reclamation of valuable material. Models from ..... $286 and up.

BUT YOU CAN MAIL THIS COUPON TO PANGBORN FOR HELP IN SOLVING THEM!

Pangborn

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment

☐ Blast Cleaning Cabinets
☐ Blast Cleaning Machines
☐ Unit Dust Collectors
☐ Hydro-Finish Cabinets

PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.
Gentlemen: Please send me more information on the equipment I've checked. To be used for.....
.....
Name .....
Company .....
Address .....
City .....Zone....State.....

NEW LITERATURE—Continued

Identify as IEN - 0625

MAGNETS . . Design considerations for Alnico permanent magnets are given as part of new 4-page bulletin. They include machining, magnetization, permanency, calculations. General Magnetic Corp., 10001 Erwin Ave., Detroit 34, Mich.

Identify as IEN - 0626

MARKING TOOLS . . Steel stamps in character and symbol designs, embossing and other press dies, type holders, rubber etching and printing dies, brands, marking machines, engraving service. Twenty-page Catalog 53 also suggests type faces and layout of wording. Newark Stamp & Die Works Inc., 201-5 Market St., Newark 2, N. J.

Identify as IEN - 0627

FLOW METER . . For steam and gas has a 25:1 metering rate with accuracy to 4 per cent. How this is accomplished is told by schematic diagrams and text in 4-page Catalog 985 along with compensation. Penn Industrial Instrument Corp., 4108-12 Haverford Ave., Philadelphia 4, Pa.

Identify as IEN - 0628

MICROSCOPES . . Phase-contrast method of controlled illumination for thin transparent objects in a microscope field is treated in 16-page Catalog D-104. A diagram shows how the method works. Accessories are cataloged. Bausch & Lomb Optical Co., 626 St. Paul St., Rochester 2, N. Y.

Identify as IEN - 0629

MILLING CUTTERS . . Carbide-tipped design has interchangeable teeth that bolt into the body in a backed-up arrangement. Drawing and sizes in 4-page "Class-1000." Millit Div., Kraus Design, 33 Flint St., Rochester 8, N. Y.

Identify as IEN - 0630

MILLING MACHINE . . High-speed machine for irregular profile milling of inside and outside contours in non-ferrous parts. Set-up pictures in 16-page Bulletin 1140 show scope of work handled. They are accompanied by specifications. Onsrud Machine Works Inc., 3909 Palmer St., Chicago 47, Ill.

Identify as IEN - 0631

MILLING MACHINES . . Automatic profiling and grinding machines for jet compressor blades start with rough forgings and finish with polished precision parts. Five machines and sequence of operation are shown in 8-page Bulletin 50731. Ex-Cell-O Corp., 1202 Oakman Blvd., Detroit 32, Mich.

Identify as IEN - 0632

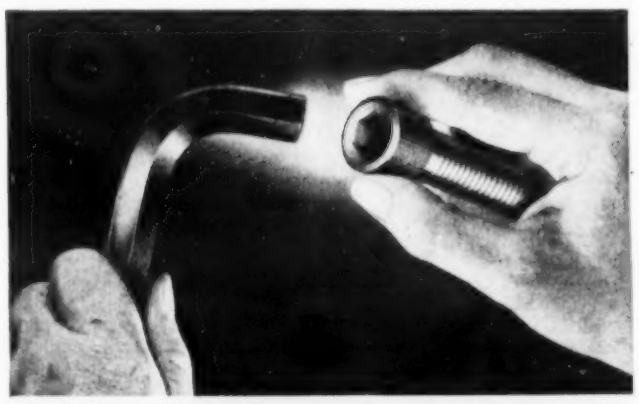
MOTOR CONTROL . . Across-the-line starters, manual and magnetic for 1½ to 50-hp. three-phase ac. motors. Bulletin 14-B-7132A, 8 pages, reviews these and combination starters, reversing starters, pushbutton stations, arrangements. Allis-Chalmers Mfg. Co., 909 S. 70th St., Milwaukee 14, Wis.

Identify as IEN - 0633

MOTOR CONTROL . . Noark control center consists of a standard steel enclosure to take starters in a desired size. It provides centralized grouping for a plant area or a factory. Engineering data in 16-page Bulletin MS-6000. Federal Electric Products Co., 55 Paris St., Newark 5, N. J.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9166



Here's why it pays to use

BRISTOL'S SOCKET CAP SCREWS

- easier, faster setting for speedy assembly
- greater holding power, shock and vibration-resistance
- they permit more compact design, with smooth, flush surfaces for safety and streamlining

No delivery problem—adequate stock is always on hand to fill orders without delay. Write today for your free copy of Bristol's 40-page socket screw catalog. A.3.7

BRISTOL'S SOCKET SCREWS

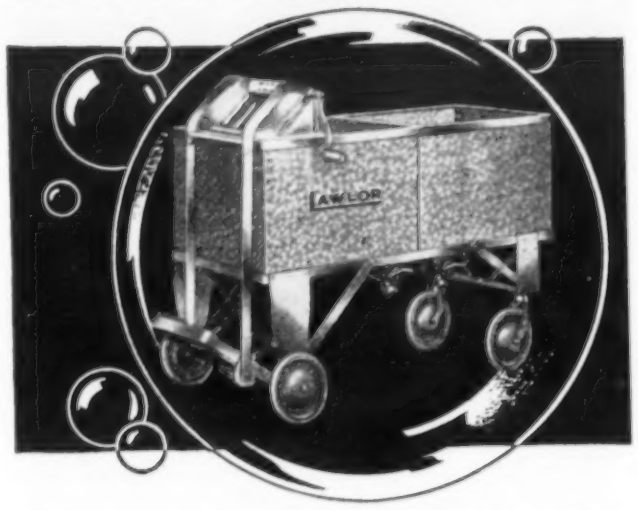
Hex and Multiple-Spline Socket Screws, Cap and Set

THE BRISTOL COMPANY, Socket Screw Division, Waterbury 20, Conn.

If you write maker identify as IEN - 9167

LAWLOR MOPPING TANKS

Lead the Field in Ruggedness and Service



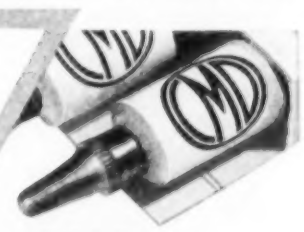
8 styles and sizes of all steel, acetylene welded tanks • 2 or 3 compartments • 30, 60 or 65 gallon capacities • hand or foot pressure wringers • perforated roll wringers • special drain shut-offs • hot dipped, galvanized chassis and frames • rubber tired, cadmium plated steel wheels.

Write for Catalog of Mopping Tanks, Wringers,, Floor Scrub Wax-Polishing Machines for every kind and size of floor.

S. C. LAWLOR CO. *Quality Floor Equipment for 50 Years*
120 North Aberdeen Street • Chicago 7, Illinois

If you write maker identify as IEN - 9168

read what users say about CMD anti-scoring lubricant



Among technical men all over the country, CMD has become the standard for extreme pressure, anti-scoring lubrication. These men have found that they can get more efficient lubrication for a longer time . . . . . and get longer life out of their equipment too. People who have used and tested CMD are your best proof of its reliability.

"We have been using your Anti-Scoring Center Point Lubricant on all ejector, return and guide pins: and we highly recommend this lubricant to anyone having trouble with scored and broken pins of this type on die cast dies." *Die Manufacturer*

"We have tried out your CMD Anti-Scoring lubricants in both grease and oil in comparison with another brand claiming to be the world's best, for the purpose. We are happy to report that we have found your product superior in remaining in its protective position under sustained heavy loads for the longest periods of time of any material we have tried for this purpose." *Engineering Consultant*

"Some time ago you very kindly sent to us some samples of your CMD Center Point Lubricants. These have been carefully tested in a number of applications besides the lubricating of centers, and we are pleased to say that the results have been very satisfactory even in cases where other well known high pressure lubricants have failed in a very short time." *University Dept. of Physics*

Sample Kit Available for Your Trial

CHICAGO MANUFACTURING & DISTRIBUTING CO.

1904 West 46th Street • Chicago 9, Illinois

If you write maker identify as IEN - 9169

Tops in Quality !

ILLINITE®

STANDARD CUTTING TOOLS

Now you can have End Mills, Saws, Milling Cutters, Tool Bits, Hobs and Shaper Cutters featuring the design advantages and precision that have won such wide recognition for Illinois Tool Works engineered cutting tools.

AVAILABLE FROM STOCK AT LEADING DISTRIBUTORS

yours Free . . . write today for this complete catalog with price and dimensional data.

ILLINOIS TOOL WORKS
2501 North Keeler Avenue Chicago 39, Illinois

If you write maker identify as IEN-9170

THIS number

brings you THIS 42-page catalog

telling you how to get up to 6 to 1

savings on ball bearings

Millions of dollars are wasted because an important principle of bearing design is ignored. This catalog describes the principle and shows you how to save up to 85% on many bearing purchases. Write for it today.

The oldest, largest manufacturer of "Commercial" Ball Bearings

SCHATZ "Commercial" BALL BEARINGS

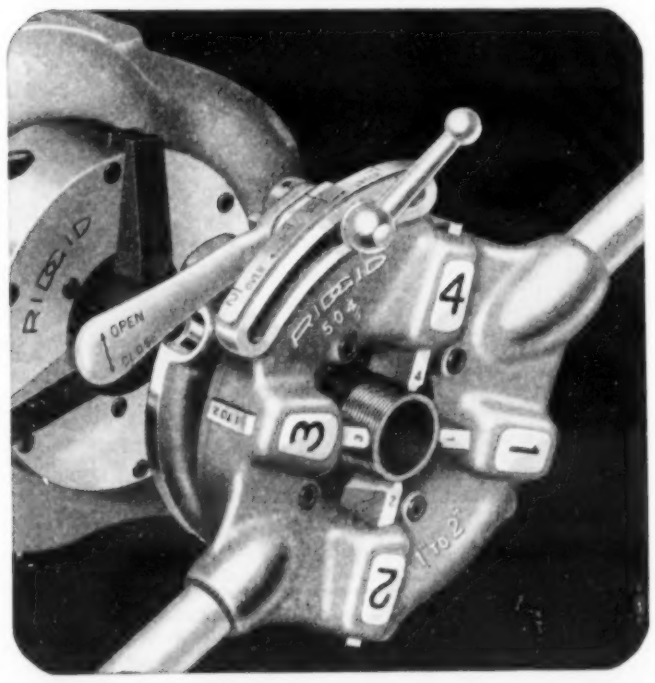
THE SCHATZ MANUFACTURING CO., 6750 Fairview Ave., Poughkeepsie, N.Y.

If you write maker identify as IEN-9171

NEW RIDGID

Quick-Opening "504" PIPE THREADER

for Power Drive use



Threads 1" to 2" pipe with 1 set of dies

You can't beat this new "504" for fast smooth threading with power drive! Changes instantly from size to size regardless of position of quick-opening lever . . . Release ball handle, move indicator line to 1", 1¼", 1½" or 2" on size bar, tighten—it's ready to thread! Quick-opening handle retracts dies instantly without stopping power drive—no slow backing off. 4-jaw workholder centers pipe for accurate threading. No lead screw to jam. Easy-to-read size bar. Adjustable to over and under size threads. See it . . . try it . . . buy the new "504" at your Supply House.

THE RIDGE TOOL COMPANY • ELYRIA, OHIO

RIDGID Work-Saver Pipe Tools

If you write maker identify as IEN-9173

HEATING . . Direct fired space unit, light oil or gas, to 1,000,000 btu.

Source: AMERICAN FOUNDRY & FURNACE CO.
McClun & Washington Sts., Bloomington, Ill.

Easy access

The burner on this new Dyne[illegible] unit heater fires into a two-[illegible] stainless steel firebox [illegible] the main body of the assembly. Products of combustion move downward through a two pass tubular economizer from where they are exhausted by a motor driven induced draft blower. Air, for circulation, is drawn in at the bottom of the housing by two motor driven centrifugal blowers. It moves upward around the economizer tubes, then around the firebox to directional outlets at the top of the housing arranged as required.

Two sizes rate 750,000 and 1,000,000 btu. per hr. with air handling capacity at 8,500 and 11,500 cfm. Overall dimensions are 44 by 92 by 129 in. with the outlet fittings. The air circulation blower rates 3 and 5 hp. Stack diameter is 10 inches. Several outlets can be specified, as shown in the illustration, or one relatively large one is available for connection to a duct. Control equipment includes a thermostat, combination bonnet, high limit and blower switch, electronic primary burner delay, draft actuated delay switch, thermal overload motor protection.

If you write maker identify as IEN-9174

FEEDING . . Proportioning equipment meters liquids into process lines

Source: PHILADELPHIA PUMP & MACHINERY CO.
353 Wynnewood Ave., Wynnewood, Pa.

Standard components

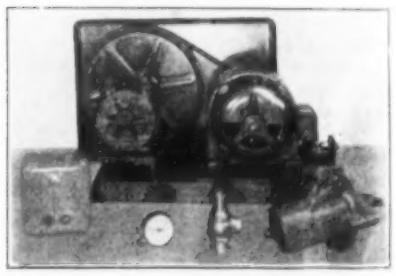
New assembly of the company's proportioning pump, previously described IEN-6925-53, includes a steel solution tank of 50 or 100-gal. capacity equipped with a liquid level glass and the connecting pipe between tank and pump. A stainless steel strainer is mounted in the pipe.

The pump motor is controlled manually or by mechanical or electric means. The pump is available in single or duplex design with spring loaded double ball valves made of stainless steel or special alloy for the intended service.

If you write maker identify as IEN-9175

PUMP . . Motor driven rotary for fuel oil, ratings 100 to 700 gph.

Source: YORK-SHIPLEY INC.
502 Jessop Place, York, Pa.



Moves oil to burner

Four models of York-Power fuel oil pump sets are announced by the company for use on industrial oil burners. The Tuthill rotary pump will handle heavy as well as light oils. It is mounted for belt connection to its motor on a structural steel base and is accompanied by the necessary accessory equipment to make the installation complete. This equipment includes a push-button magnetic motor starter, a strainer, pressure gage and relief valve.

If you write maker identify as IEN-9176

NAMEPLATES . . Made of plastic are corrosion resistant and permanent

Source: AMERICAN LUCOFLEX INC.
1 E. 57th St., Room 707, New York 22, N. Y.

Decorative permanent

Lucoflex, the company's non-plasticized polyvinyl chloride, is now available in sheet form that can be die cut to any desired shape. It can be machined and color printed to produce tags, nameplates, instruction plates. Bar and rod of the same material are available for manufacture of holding screws and rivets so the complete unit is permanent and corrosion resistant.

The sheet material can be made flat or to fit on curved surfaces. It is tough and unaffected by aging at elevated temperatures. It can be milled, bored and welded, the latter operation employing a new triangular section welding rod of the same material. Colors can be embedded to become an integral part of the plastic. Etching, with vinyl inks, provides permanent coloring in variety of combinations.

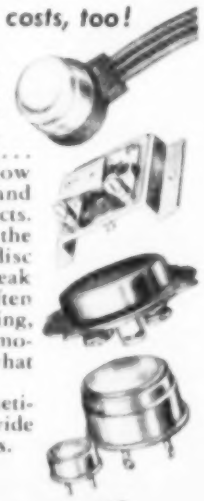
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9177

Have you a temperature control problem from -20°F to 550°F?

KLIXON *Thermo-Snap* **CONTROLS**

can meet your requirements . . . often reduce costs, too!



What's your temperature control problem . . . high or low limit, fan control, temperature control . . . on boilers, clothes dryers, unit and space heaters, refrigeration and electronic equipment . . . Klixon Thermo-Snap Controls are now meeting the requirements for these and other uses in military and civilian products.

The advantage of Klixon Controls is the Spencer snap-acting thermostatic disc which always makes a quick, clean break or a sure, solid make no matter how often it operates. The Spencer disc is snap-acting, it is not affected by shock, vibration, motion or high altitude no matter in what position it is mounted.

Klixon Thermo-Snap Controls, hermetically sealed and open are available in a wide variety of operating temperature ranges.

Write for further information.

SPENCER THERMOSTAT
Division of Metals & Controls Corp.
208 FOREST STREET, ATTLEBORO, MASS.

KLIXON

If you write maker identify as IEN-9178

If you write maker identify as IEN - 9180

NEW to cut your costs and increase production

HOBBS AUTOMATIC PRODUCTION CUTTER

Feeds, controls, measures, and cuts soft "in-process" materials to uniform sheet sizes!

Designed for easy handling of paper, plastic, cloth, etc. up to 60" wide from extruders, laminators, "in-process" operations, or from rolls and sheets. Uses electronic measuring device and precise controls for accurate, low cost operation. Processes material at rate of 10 to 100 feet a minute, depending on length of cut. Web can be cut into smaller widths by adding slitting attachment, so material can be accurately slit and cut in one operation. Special feeding and take-away devices are available for any production set-up.

For trouble-free performance through the years, specify only genuine Hobbs replacement blades, accessories and repair parts.

For your profit's sake — be sure to investigate this new machine now! Write for complete details.

HOBBS MANUFACTURING CO.
40 SALISBURY ST., WORCESTER 5, MASS.
EST. 1883 Producers of Modern Machinery for Modern Industry
Jacques Hand Shears, Hobbs Production Cutters, Corner Cutters, Slitters and Rewinders, Automatic and Tri-Power Die Presses.

If you write maker identify as IEN - 9181

Goodbye Elbow Grease!

Use HAND-I-HACK* Portable POWER HACK SAW

TAKE IT EASY—let electricity do your muscle work! Hand-I-Hack eliminates the sweat and fatigue of hack sawing. Plugs into any wall or light socket. Truly portable — can be carried anywhere with one hand. Has swivel vise — operates in any position: horizontally, vertically, at an angle, even upside down. Maximum capacity: 3" x 3" square cut. Uses lower cost standard 10" hand blades — will cut solid bar stock and thin wall tubing, pipe, conduit, cable, rolled forms, etc.

Cutting small diameter brass tubing, using wood block false jaws.

Making a square cut on solid 3" steel bar.

• Write for catalog and name of dealer

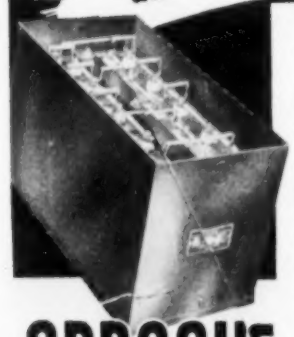
*T.M. Reg. U.S. Pat. Off.

Lipe-ROLLWAY CORPORATION
Manufacturers of Automotive Clutches and Machine Tools
812 Emerson Ave., Syracuse 1, N. Y.

If you write maker identify as IEN - 9182

HOW TO SAVE ON POWER BILLS

...also on wiring, switchgear and transformer costs!



Cut costs by installing Sprague power factor correction capacitors on your motors and other inductive electrical equipment! Monthly power bills can frequently be materially reduced. Greater loads can be handled from existing circuits. Wiring, transformer and switchgear costs can be greatly minimized in new installations.

SPRAGUE "ON-THE-SPOT" Power Factor Correction CAPACITORS

WRITE FOR GUIDE

We've put the whole power factor correction story in an easily understood 28-page guide 50B, replete with cost saving suggestions and actual installation data. Write for your copy today.

SPRAGUE ELECTRIC COMPANY
165 Marshall St. • North Adams, Mass.

NEW LITERATURE—Continued

Identify as IEN - 0634

BRAKE MOTORS . . Relation between torque, brake size and motor frame size is shown in a chart that forms part of new 8-page Bulletin B-501-A. Information covers motor-and-brake assemblies from ½ to 100 hp. Star-Kimble Motor Div., 202 Bloomfield Ave., Bloomfield, N. J.

Identify as IEN - 0635

NAMEPLATES . . Made of embossed metal with raised lettering that will remain legible when painted or galvanized, also metal label holders. "Tank Products" bulletin, 6 pages, shows designs, also tank leg lugs, welding flanges for 275-gal. oil tanks, septic tank flanges. Tech Products Inc., 440-44 Mosel Ave., Staten Island 4, N. Y.

Identify as IEN - 0636

PACKINGS . . Recommendation tables on rod and sheet packings for products from air to hot water, instructions on installation and lubrication, temperature and area charts, in 40-page Catalog NY-2697-P, copyright 1952, with information on 9 packing styles for most work. New York Belting & Packing Co., 3 Market St., Passaic, N. J.

Identify as IEN - 0637

PLASTIC MATERIAL . . Thermoplastic resin derived from wood to use in products from adhesives to ink. Compatibility tables and forms in 16-page "Vinsol" bulletin. Hercules Powder Co., 1940 Delaware Trust Bldg., Wilmington 99, Del.

Identify as IEN - 0638

PLASTIC SHEET . . Dilecto laminated phenol fibre sheet, tubes, rod are described in detail by a properties chart in 12-page Bulletin GF-53. It also covers vulcanized fibre, includes fabricating and application suggestions. Continental-Diamond Fibre Co., 2 Chapel St., Newark, Del.

Identify as IEN - 0639

PRESS ATTACHMENTS . . Roll feeds, stock straighteners, scrap choppers, slide feeds, stock reels, coil cradles, and a sweep-type guard for power press application. Sizes, selection notes and list prices in 16-page catalog. Durant Tool Supply Co., 153-57 Orange St., Providence 3, R. I.

Identify as IEN - 0640

PRESS TOOLS . . Type-C hole-punching units for angles, extrusions, shapes and sheets. Individual units and multiple assemblies are in 16-page Catalog C. Wales-Strippit Corp., 361 Payne Ave., North Tonawanda, N. Y.

Identify as IEN - 0641

SCREW PUMP . . Intermeshing pairs of screws in the Warren-Quimby pump handle non-abrasive liquids or semi-liquids with a minimum of churning. Bulletin WQ-S-205, 12 pages, shows screw details, drive method, modifications such as one for pressures to 1,000 lb. and a vertical model. Warren Steam Pump Co., 50 Warren St., Warren, Mass.

Identify as IEN - 0642

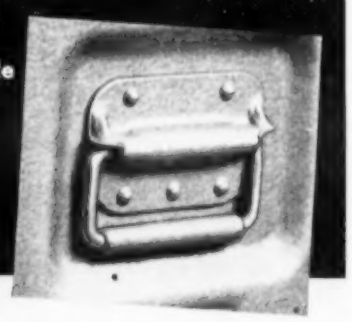
TURBINE PUMP . . Vertical design, originally for deepwell service, finds use in industrial plants and process service. Examples are pictured in 8-page Bulletin W-450-B41. Worthington Corp., 423 Worthington Ave., Harrison, N. J.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9183

Best handle . . . by far!

• Rugged • No Rattle
• Rust-proof
• Built to Military Specifications



Attention manufacturers of portable equipment, carrying cases, parts boxes, etc.! If your product requires side-carry handles, install the best—the Bendix-Friez handle. This superior handle was developed to meet strict military requirements for many specialized equipment uses. Ruggedly built of aluminum and stainless steel in a sturdy design, it knows no equal for long, faithful service. Can be riveted or welded to any kind of container . . . or depressed in the surface, if desired. Unique "snap-back" feature stops rattle from shock and vibration. Prompt attention to both large and small lot orders. Try us today.

Bendix-Friez

FOR FULL DETAILS, WRITE:
FRIEZ INSTRUMENT DIVISION OF Bendix
1328 Taylor Avenue, Baltimore 4, Maryland
Export Sales: Bendix International Division, 205 East 42nd Street, New York 17, N. Y.

If you write maker identify as IEN - 9184

MYSTIK BRAND TAPES • SELF-STIK

New!

MYSTIK® BRAND

Corner Protectors!

These rubberized fiber Corner Protectors attach by their own adhesive to corners of metal sheets. Protect corners from damage. Prevent corners from scratching other surfaces or causing personal injuries. Save countless dollars of refinishing and replacement on finished work. Easy to attach. Stay on sheets during storage, transfer, fabrication. Write for information and free samples. Mystik Adhesive Products, 2644 N. Kildare, Chicago 39.

Trademark Mystik Registered

© Mystik Adhesive Products, 1952

If you write maker identify as IEN - 9185

PROBLEM: Dependable Circuitry

SOLUTION: Leach RELAYS

The efficient performance of *Leach Relays* is always at work delivering dependable, crisp, circuit control, infinite versatility and maximum potentials for use. Here at *Leach* you will find complete engineering, testing and production facilities to help you solve your relay problems.

FOR BETTER CONTROLS THROUGH BETTER RELAYS
—*Specify Leach*

LEACH RELAY CO.
5915 AVALON BOULEVARD, LOS ANGELES 3, CALIFORNIA
Representatives in Principal Cities of U. S. and Canada

If you write maker identify as IEN - 9186

SAFETYMIX
EXTRA SHOWER SAFETY
. . . at no extra cost

PROTECTS AGAINST SUDDEN SCALDS
. . . Safetymix, world's leading pressure-actuated non-scald shower valve gives safety in the shower. Safetymix automatically shuts down flow if either hot or cold water fails.

HOLDS SHOWER TEMPERATURE CONSTANT
. . . Even with excessive pressure fluctuations up to 85%, Safetymix still maintains constant discharge temperature.

LIFETIME SHOWER VALVE
. . . The most rugged shower control valve made. Only Safetymix has the patented Flow Control Spindle with but *one* moving part to control *all* valve functions. Built to last a lifetime.

GET FREEDOM FROM COSTLY MAINTENANCE
. . . Safetymix is designed with self-cleaning action to prevent clogging and save water. All parts accessible from the front. As easy to fix as a faucet.

100,000 Installations Can't Be Wrong. Used by U. S. Army, Navy, Merchant Marine, colleges, industrial plants, hotels, clubs, hospitals, apartments and homes.

Send for bulletin and prices.

SAFETYMIX — MADE BY THE MAKERS OF THE NEW SYMMONS TEMPERING-CONTROLLER

Symmons ENGINEERING COMPANY
791 TREMONT ST., BOSTON 18, MASS.

If you write maker identify as IEN-9187

It's as easy as this to

ISOLATE VIBRATION

and

SAVE MONEY

with ISOMODE Pads*

Here's the durable mounting to absorb shock...reduce noise ...cut your maintenance costs. In hundreds of installations, the Isomode Pad has proved to be not only one of the most economical mounts, but also one which does a superior job of isolating vibration.

By absorbing forces normally transmitted to floor, Isomode Pads reduce building damage and undue deterioration of machinery. No bolting in most cases.

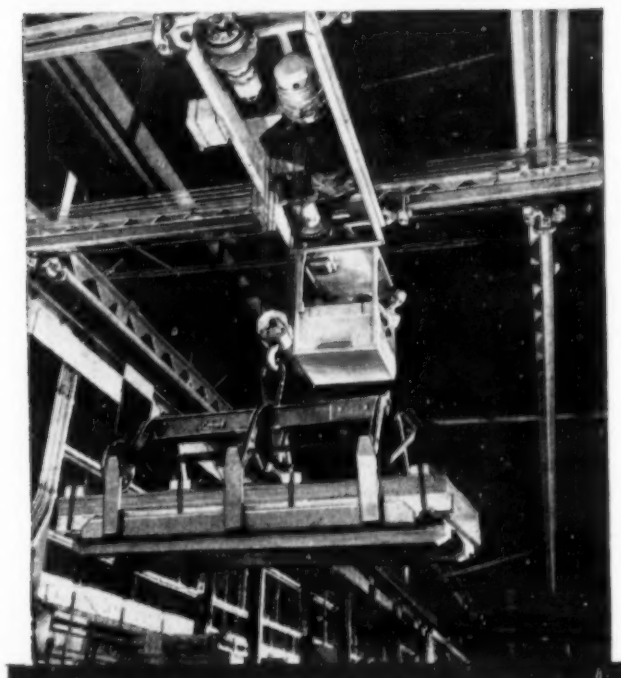
Made of oil, age- and water-resistant Du Pont Neoprene. Write for details – discover their surprisingly low cost.

**Trade Mark Reg. U.S. Pat. Off.*

THE MB MANUFACTURING COMPANY, INC.
1064 State St., New Haven 11, Conn.

If you write maker identify as IEN-9188

ECONOMICAL SHEET HANDLING



LOUDEN OVERHEAD HANDLING OF SHEET STEEL PAYS FOR ITSELF QUICKLY, AND YIELDS TREMENDOUS SAVINGS IN MAN-HOURS . . .

To meet the mill practice of shipping sheet steel in five-ton bundles, it is almost mandatory that fabricators likewise use overhead handling equipment. Otherwise expensive man-handling and inefficient transportation inside the plant are inescapable. Further, steel prices are higher when sheets are shipped in less than five-ton bundles.

Louden Monorail equipment permits bundles to be hoisted intact from railroad cars and moved to storage or the start of a fabricating process anywhere inside the plant. Then, the same equipment may be used for intermediate handling steps in the fabricating process.

WRITE FOR THIS FREE BOOK

Case histories telling how Louden Monorail Systems have saved time and money for widely different kinds of industries are described and pictured in a new, illustrated, 56-page book called, "Economical Material Handling".

THE LOUDEN MACHINERY COMPANY
7611 S. Superior Ave., Fairfield, Iowa

Louden

OVERHEAD MATERIAL HANDLING

If you write maker identify as IEN-9190

CRANE . . Hand hydraulic assembly, wheel mounted, 1 ton at 4 foot reach

Source: RUGER EQUIPMENT CO.
613 W. 4th St., Uhrichsville, Ohio

Catalog 1953

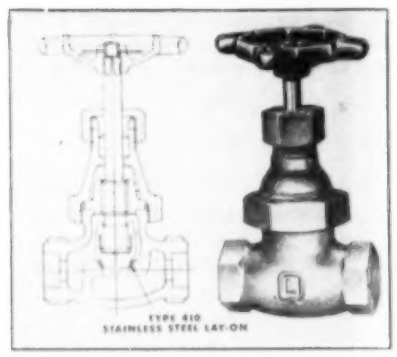
Model HP-18B is a new 1-ton assembly in the company's line of hand-hydraulic floor cranes, previously described IEN-6435-50. Its pump directs pressure to a cylinder and piston supporting the hinged boom to lift or lower a load. Lift range is between 34 and 105 in. above the floor with the telescoped boom retracted. Distance above the floor, in horizontal position, is 69 inches.

The base is equipped with retracting stabilizers that lift out of the way for movement to a new location. They support the frame when they are down in holding position. Length inside the legs is 53 inches. Highest position for the extended boom is 129 inches. Load capacity, extended, is 500 pounds.

If you write maker identify as IEN-9191

VALVE . . Globe and angle designs, 1/4 to 2 in., pressure to 600 pounds

Source: LUNKENHEIMER COMPANY
653 Beekman St., Cincinnati 14, Ohio



To throttle and close

Cast steel, WB alloy, is employed in the body and bonnet of this new line of steel valves. The bonnet threads onto the body to clamp a wear resistant alloy plate, or bushing, that carries the threads to engage the rising stem.

Stainless steel Type 410 is employed in the stem and seat. The disc is Type 420. The seat is formed by weld depositing the stainless steel in the body. The valve is available in globe and angle designs with threaded or weld connections. List price is $23 to $100 in sizes from 1/4 to 2 inches.

If you write maker identify as IEN-9192

DRIVE . . Right angle speed reducer mounts on specified driving motor

Source: REULAND ELECTRIC CO.
Westminster & W. Mission, Alhambra, Calif.

Low speed high torque

The company has added a new right angle reducer to its line of drives including plain motors in squirrel cage or slip ring design, multiple-speed and torque-converter fluid shaft units. The reducer itself mounts two shaft extensions and is available for output speeds of 18, 24, 26 and 58 rpm. on 1/2, 3/4, 1 and 1 1/2-hp. ratings.

The assembly can include a Through-Shaft motor with a magnetic brake as an integral part. It can include a brake on either or both input and output sides when the Fluid-Shaft motor is specified. A 1-hp. Fluid-Shaft unit is illustrated.

If you write maker identify as IEN-9193

EXTINGUISHING . . Wheel type unit holds 26 pounds of carbon dioxide gas

Source: RANDOLPH LABORATORIES INC.
6-10 E. Kinzie St., Chicago 11, Ill.

Catalog R-2653

Fires in electrical equipment and flammable liquids can be put out quickly by this new Randolph-26 wheel mounted extinguisher. The unit rides on [illegible] in. wheels. It is controlled by a thumb-operated trigger for delivery through a 10-ft. hose and nozzle to blanket flames in a 20-ft. sweeping arc.

Releasing the trigger stops the flow and saves the remainder of the charge for future use. A lock-down yoke holds the trigger open, if the operator sets it. The extinguisher is Underwriters' Approved.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9194

HERE'S WHY

PUROX
Trade Mark

BLOWPIPES *COST SO LITTLE TO USE AND MAINTAIN*

SELF-SEATING VALVES
Reseat scored valves when turned tight.

RUGGED HANDLE ASSEMBLY
Built for long, trouble-free service.

SLIP-FIT "O" RINGS
Perfect gas seals every time.

MIXER IN EACH HEAD
Resists backfires, eliminates burnouts.

SWAGED, PURE COPPER TIPS
Heads snap in handle. No wrench needed.

The Purox W-202 blowpipe (illustrated) is available with 13 standard welding heads and 3 multiflame heating heads, all of the snap-in type. Ask your LINDE jobber for a demonstration or write for further information. LINDE AIR PRODUCTS COMPANY, a Division of Union Carbide and Carbon Corporation, 30 E. 42nd St., New York 17, N. Y. In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto.

get it from your LINDE jobber

The terms "Purox" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.

If you write maker identify as IEN-9195

SEND FOR THIS NEW BULLETIN

Improved Method Centrifugal SPRAY DRYER *and* CONCENTRATOR*

CONTRACT DRYING

We invite inquiries for Contract Drying in our fully equipped, Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooling and Sanitary Pumps with variable speed drives for handling the liquid material and controlling the moisture.

***CONCENTRATOR AVAILABLE SEPARATELY**

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining neutral flavors and vitamins.

Write for New FREE Bulletin 265

DRYING and CONCENTRATING CO.
332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN-9196

Protects AIR TOOLS AND EQUIPMENT

against rust, scale and condensation in the air line ...provides constant lubrication

The Keller Lubricator-Filter operates automatically when air tools or equipment are in operation. Filter removes moisture as well as solids—easily cleaned by opening drain cock at bottom. Oil feeds from the lubricator through an upright wick—no flooding or waste when tools are not in use.

Transparent bowls show when filter needs draining, or when light spindle oil should be added to lubricator. Write for descriptive Bulletin #65-5.

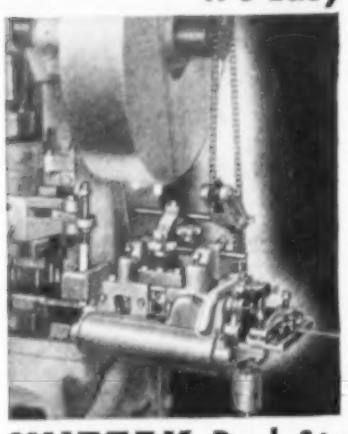
Send for **illustrated descriptive bulletin and detailed information**

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN-9197

Get RAPID-FIRE PRODUCTION from your PUNCH PRESSES

It's Easy with WITTEK Automatic Roll Feeds



Wittek automatic roll feeds fit all makes and sizes of punch presses — provide maximum efficiency and extreme accuracy in the high speed automatic feeding of strip stock. Made in single roll, double roll, and compound types with straighteners, in models to feed (push or pull) in any direction. Length of feed is easily adjusted to meet individual requirements.

4472

WITTEK Reel Stands

Simplify Handling of Coiled Stock

Choice of standard models to facilitate handling coiled stock . . . from small, light coils to those weighing up to 800 pounds. Larger reel stands automatically center the coils — provide frictional braking action to prevent overrunning, maintain uniform coil slack.

Write for full particulars

WITTEK Manufacturing Co.

4336 W. 24th Place, Chicago 23, Illinois

Automatic ROLL FEEDS AND REEL STANDS

If you write maker identify as IEN-9198

keep costs down

with accurate job time records

CALCULAGRAPH

FIGURES ELAPSED TIME ACCURATELY

PRINTS DATE
STARTING TIME
FINISHING TIME
TOTAL ELAPSED TIME

Keep production costs in line with automatically computed, precision Calculagraph job time records. Just stamp card at beginning and ending of the operation. Calculagraph prints date, starting and finishing time plus precision calculated elapsed time. One Calculagraph can record and compute job time data for one entire shop or department by handling any number of cards in any sequence. Accurate, printed Calculagraph records can be filed for future use in estimating on new orders and checking production efficiency. Calculagraphs are low in cost, practically maintenance-free and built for a lifetime of dependable service.

COUPON BRINGS FULL INFORMATION
— FILL IN AND MAIL TODAY!

CALCULAGRAPH COMPANY
SUSSEX STREET, HARRISON, NEW JERSEY

Send complete data on Calculagraph to:

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

NEW LITERATURE—Continued

Identify as IEN-0643

VACUUM PUMPS . . Microvac pumps for high vacuum in industrial process operations are the subject of revised 36-page Catalog 750. How to select them, operating principle, examples of use are included with a data section on vacuum problems, formulas, conversion factors, vapor pressures. F. J. Stokes Machine Co., 5956 Tabor Road, Philadelphia 20, Pa.

Identify as IEN-0644

RAIL SWITCHES . . Turnout diagrams and installation data for industrial track switches, timber requirements, switch stands, crossings, frog descriptions. Catalog 575-A, 44 pages. L. B. Foster Co., Box 1647-A, Pittsburgh 30, Pa.

Identify as IEN-0645

RECORD KEEPING . . Loose-leaf binders to hold your company's catalogs, instruction manuals, engineering booklets can be embossed with your company's name or trade mark. Mechanical details in 44-page Booklet LL-234. Remington Rand Inc., 315 Fourth Ave., Rm. 1618, New York 10, N. Y.

Identify as IEN-0646

RELAYS . . Electronic relay will pick up or drop out with change of resistance in a circuit. You can apply it to fhp. motors, motor control, lights, contactors, warning devices. Drawings in 4-page Bulletin GEA-5893 show how. General Electric Co., Dept. 6X-201, Schenectady 5, N. Y.

Identify as IEN-0647

RESISTORS . . Wire-wound power resistors, 5 to 225 watts, tubular and flat, non-inductive and ferrule types, fixed and adjustable. Resistance ranges, mounting data, information on derating in 12-page Bulletin C-1. International Resistance Co., 407 N. Broad St., Philadelphia 8, Pa.

Identify as IEN-0648

SOCKET SCREWS . . Picture summary with size ranges on socket-head cap screw, set screws, stripper bolts, flathead and button head screws. Bulletin 867, 4 pages. Standard Pressed Steel Co., Box 555, Jenkintown, Pa.

Identify as IEN-0649

PACKAGE SEALING . . Printed gummed tape is recommended as a deterrent to pilfering by 4-page bulletin which cites 8 examples from bearings to radios. Ask for "Insure Against Pilferage", which gives information on "Itstix" tape. Nashua Package Sealing Co., Nashua St., Nashua, N. H.

Identify as IEN-0650

SHAFT SEALS . . End face seal for a rotating shaft employs two mating lapped surfaces to retain lubricant and exclude dirt. Variations of the basic designs are shown by cutaway views and drawings in 36-page EF-53. Chicago Rawhide Mfg. Co., 1303 N. Elston Ave., Chicago 22, Ill.

Identify as IEN-0651

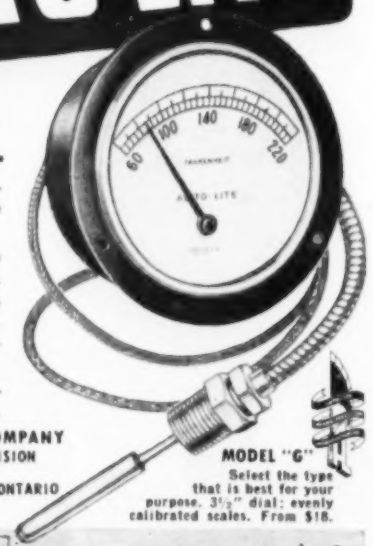
SOLDERING FLUX . . Four basic types of soldering flux are described in new 12-page catalog; rosin, activated resin, organic-base and chloride types. Properties of each and modifications, six for printed circuits, are covered. Kester Solder Co., 4199-03 Wrightwood Ave., Chicago 39, Ill.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9200

for Eye-Level Readings . . .

AUTO-LITE



TEMPERATURE INDICATORS . . .

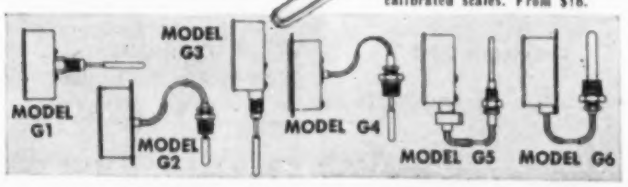
Precision-built indicators provide accurate temperature readings.

Low-cost protection . . . due to large, specialized production. Wide selection of dial ranges to meet specific requirements. Choice of stock types available as shown.

Send for new catalog, describing many thermometer styles.

THE ELECTRIC AUTO-LITE COMPANY
INSTRUMENT AND GAUGE DIVISION
TOLEDO 1, OHIO
NEW YORK • CHICAGO • SARNIA, ONTARIO

MODEL "G"
Select the type that is best for your purpose. 3½" dial; evenly calibrated scales. From $18.



If you write maker identify as IEN-9201

The ease with which your equipment may be guided, and the smooth operation of the positive swivel, will continue over a long life of satisfactory service if you use

Darnell Casters

DEMAND DARNELL DEPENDABILITY

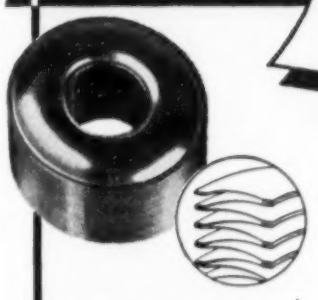
Write for Free Darnell Manual

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

If you write maker identify as IEN-9202

Can You Use BELLMETS?*

*Metallic Diaphragm BELLOWS with Specific Mechanical, Electrical and Thermal Properties



- Convolutions electrically insulated from each other
- Contour construction to resist pressures exceeding 500 PSI
- Materials heat resistant to 500° F.

Bellmets represent a unique development in welded diaphragm bellows. All welds either on the inside or outside diameter (depending on whether operating pressure is to be internal or external) are replaced with a dielectric bonding material. The bonds are strong, slightly resilient, highly resistant to heat, and insulate each end of the bellows from the other.

Bellmets have already solved problems in engine noise attenuation, pressure switch simplification, circuit control at high pressures. Wherever heat, pressure, or electrical characteristics present a problem, job-engineered Bellmets — in a wide range of sizes and specifications — may prove the ideal solution.

WRITE TODAY for complete information, outlining your specific problem or interest.

BREEZE CORPORATIONS, INC.
41 South Sixth St., Newark, N. J.

ANOTHER BREEZE MARK PRODUCT

If you write maker identify as IEN-9203

MET-L-WOOD METAL BONDED TO PLYWOOD

Has Hundreds of Structural Uses in Modern Plants

To Name a Few:

- Walls and Partitions
- Doors
- Counters and Shelves
- Traffic Panels
- Truck Bodies (Patented "Ribless" Construction)
- Truck Body Panels
- X-Ray Rooms
- Moisture-Vapor-Proof Rooms and Containers
- Decorative Finishes

Met-L-Wood stock panels and prefabricated units are a challenge to modern industrial engineers and designers because of their multiple possibilities in economical, structurally-sound designs in hundreds of varied uses. Best start toward thinking in terms of Met-L-Wood design opportunities is to send for the Bulletin described below. . . Met-L-Wood Engineering Service is available without obligation on specific problems.

Met-L-Wood is metal bonded to plywood — permanently. Many metals, woods, thicknesses, shapes, finishes are available to meet YOUR requirements.

SEND FOR THIS BULLETIN ON MET-L-WOOD USES AND ADVANTAGES

Quick facts, with illustrations and diagrams on Met-L-Wood applications, types, possibilities. Sent without obligation on request.

MET-L-WOOD CORPORATION
6755 West 65th Street • Chicago 38, Illinois
"Met-L-Wood . . . opening new horizons to structural designers"

If you write maker identify as IEN-9204

HOW INDUSTRY IS SAVING MONEY

A PROBLEM—Perhaps it's a bottleneck on the assembly line, broken shipments at the delivery point, stock confusion in the supply department, or any one of a number of problems which can be solved by a dependable industrial tape.

SOLUTION, PART I

An F. O. S. Industrial Tape Analyst who can investigate a problem and suggest a solution. F.O.S. Analysts are trained technical salesmen. They know tapes and the applications which every day are doing new jobs quicker, old jobs better.

SOLUTION, PART II

F.O.S. laboratory experts who know industry's problems and have had practical experience in solving them. That's industry's assurance that if there is a better way with industrial tape, there will be an F.O.S. Tape for the job.

You Too Can Benefit—Ask to have an F.O.S. Tape Analyst call on you. He'll show you how to save time and money with F.O.S. Industrial Tape. Prices, catalogues, samples, also on request. Call on "the originators of pressure-sensitive industrial tape" . . . Write factory (below), today.

F.O.S. INDUSTRIAL TAPE DIVISION
THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN., U. S. A.

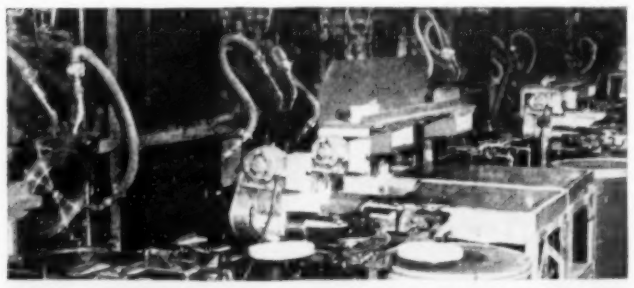
If you write maker identify as IEN-9205

The U. S. Rubber hose that breaks records . . . and helps make 'em!

U. S. Matchless Steam Hose installed on hydraulic record press.

Carrying steam at 350°F, 120 pounds pressure, and flexing 6 times a minute—that's the record-breaking job U. S. Matchless® Hose does in making phonograph records for an Eastern factory. Installed on hydraulic presses, Matchless has been on the job *for over two years* so far, with *no* failures. No ordinary hose could stand up under this treatment or protect the worker from dangerous steam. This United States Rubber Company hose really pays off in durability and safety.

Naturally, like every "U.S." product, Matchless Hose is the result of careful study and manufacturing control on the part of "U.S." engineers. For any industrial problem, call on these engineers at any of our 25 District Sales Offices. Or write to address below.



Battery of presses in the record factory. Note high flexibility of the hose.

"U.S." Research perfects it
"U.S." Production builds it
U.S. Industry depends on it

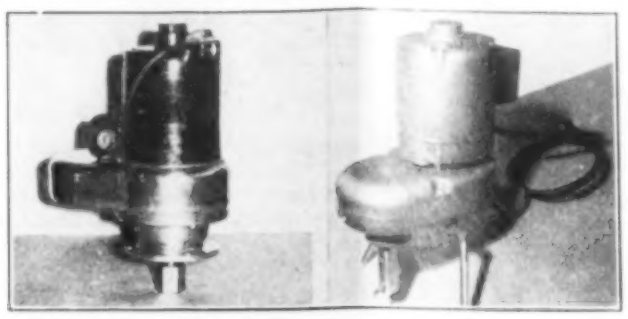
U.S. RUBBER — SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
Mechanical Goods Division • Rockefeller Center, New York 20, N. Y.
Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe & Fittings • Molded & Extruded Rubber & Plastic Products • Protective Linings & Coatings • Grinding Wheels • Packings Tapes • Conductive Rubber • Adhesives • Roll Coverings • Mats & Matting

If you write maker identify as IEN-9207

DRIVE . . Motor and V-belt head, sealed ball bearings, 1/20 to ¾ hp.

Source: PROCESS EQUIPMENT ENGINEERS INC.
400 Reed St., Belding, Mich.



Light, silent, clean

V-belts riding in sheaves on sealed ball bearing shafts apply with standard motors in the assembly of this new silent, drip proof speed reducing drive. The bearings are factory lubricated with hard grease and require no attention in service. There is no possibility for lubricant to drip from the housing. A range of standard speeds is from 50 to 440 rpm. employing standard motors of specified electrical characteristics. Higher speeds, to 1,000 rpm., can be specified. In-line and offset designs are available.

Construction includes the flange mounted motor, plain or with a switch cord and plug, cast aluminum housing with mounting flange or feet, cast aluminum sheaves, the sealed ball bearings and standard rubber-fabric V-belts. Initial application has been in drives for mixing equipment. Approximate cost for a ¼-hp. single phase assembly to operate at 82 rpm. is $65.

If you write maker identify as IEN-9208

PRINTING . . Belt fed machine exposes, develops, dries and delivers

Source: CHARLES BRUNING CO.
4702 Montrose Ave., Chicago 41, Ill.

Stepless variable speed

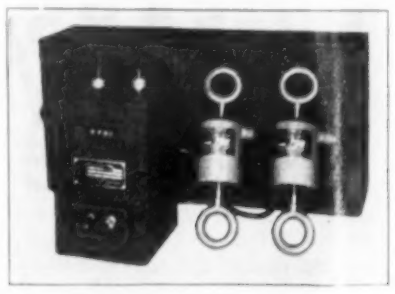
Operation is on 220-volt ac. for this new Model-15 Copyflex machine, as compared to the 110-volt ac. that remains standard on the Model 14, previously described IEN-8406-52. The higher voltage permits use of a 1,800-watt mercury arc lamp with active length of 22½ in. and addition of more strip heaters to speed moisture removal. As a result, the new machine will feed, expose, develop, dry and deliver prints, to 20 in. in width, at speeds to 30 fpm.

Copies are made on Copyflex sensitized paper, cloth or film, fed in with translucent originals. The two travel over a 6 by 24-in. glass cylinder that encloses the light source. Forward movement is by nine black cotton woven belts each 2 in. in width. Cooling air is drawn into the center of the cylinder and exhausted at both ends. The exposed sheet moves through a developer section over grooved rolls. Prints are delivered dry and are stacked in a tray at the front of the machine. It takes prints to 18 in. in length. The original is separated from the sensitized sheet automatically. Dimensions are 36½ by 35 by 57 inches. Weight is about 810 pounds. List price is $1,675.

If you write maker identify as IEN-9209

WEIGHING . . Electronic crane scale is actuated by a Baldwin load cell

Source: GILMORE INDUSTRIES
5509-13 Euclid Ave., Cleveland 3, Ohio



Ask for technical data

The load on a crane hook is read by numbers that appear in a window in an indicator housing when the company's new Model-116 electronic scale is employed on the crane. It has been designed particularly for monorail and floor operated cranes with the load cell between the crane hook and the load. An electric connection leads through a control cabinet on the crane to the indicator which mounts normally beside the pendant crane control.

The load cell actuates a Brown servo drive to operate the load reading indicator. Two of the load cells are shown in the illustration in front of the control panel to the right of the indicator. Load range is 500 to 20,000 pounds. The load cells measure 3 to 5 in. in diameter and from 4 to 8 in. in height. The control panel measures 12 by 12 by 4 inches. The indicator measures 5 by 4 by 10 inches. List price for the control panel and the indicator, without the cell, is about $1,200.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9210

IS SURFACE FINISHING A PROBLEM TO YOU?

Concise information on applying surface finishes to parts and products made from Babcock & Wilcox Tubing.

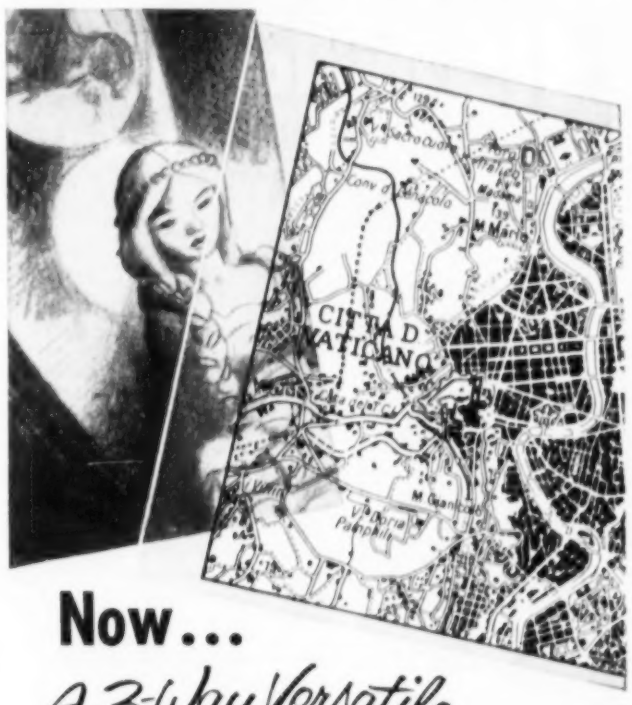
Important and salesworthy information on Cleaning—Mechanical Finishing—Metal Coating—Organic Coating.

Send for B&W Bulletin TB 350

TA-1772 (LM)

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

If you write maker identify as IEN-9211



Now . . . *A 3-Way Versatile* Drawing Material!

For drawing, lithographic printing, and exacting photographic reproduction use translucent VINYLITE Plastic Rigid Sheet with a grained surface. It can show the sharpest detail—or the softest shading. The drawing surface can produce various tints and tones by use of litho crayons and pencils. It can be multicolor printed. It can serve as a negative for photographic prints, where accurate color register is essential. With grid lines and title blocks printed to show through from the *reverse side* of the sheet, drawings are quickly and easily made. Most important, they'll *stay* accurate, for VINYLITE Plastic Sheets won't shrink or stretch! Erasures are quick and clean—ink can be scratched off with a razor blade or removed with special liquid cleansers. Drawings can be removed, and sheets used again and again.

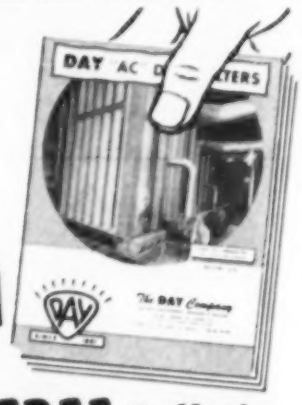
Stiff and crisp, VINYLITE Plastic Rigid Sheets lie flat—yet are pliable enough to roll up. They resist wrinkling, cracking, fraying, aging. They're easily cleaned—finger marks and smudges wipe off with a damp cloth. They resist water, grease, perspiration, chemicals, most acids and alkalies. VINYLITE Rigid Sheets are made in many sizes, several thicknesses. Other uses in industry are: charts, templates, calculators, precision drafting instruments and maps. Find out what this versatile material can do for *your* business. Write Dept. QV-3.

Data courtesy N. Teitelbaum Sons, New York 51, N. Y.

Vinylite BRAND
PLASTIC RIGID SHEET
TRADE MARK
BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
UCC
30 East 42nd St., New York 17, N. Y.

If you write maker identify as IEN - 9213

IF YOU HAVE A DUST PROBLEM



Send for this *FREE* Bulletin

Reverse Air Jet cleaning of filter tubes is the most important improvement in cloth dust filtering developed for industrial plants during the past 50 years. This Bulletin (No. 528) contains new information on dust control.

The **DAY** *Company*
813-3rd Avenue N.E. • Minneapolis 13, Minnesota
IN CANADA: P.O. Box 701, Ft. William, Ont.
Branch Plants: Buffalo, Ft. Worth, Welland, Ont.

DAY SINCE 1881 — DUST CONTROL
A SINGLE UNIT OR A COMPLETE SYSTEM

If you write maker identify as IEN - 9214

115 million cycles without a breakdown!

Torture Test Proves COMAR RELAYS are Tough

Illustration shows a typical Comar Telephone Type "TM" Relay recently subjected to exhaustive tests by a Comar user. Results: 115 million cycles without a breakdown!

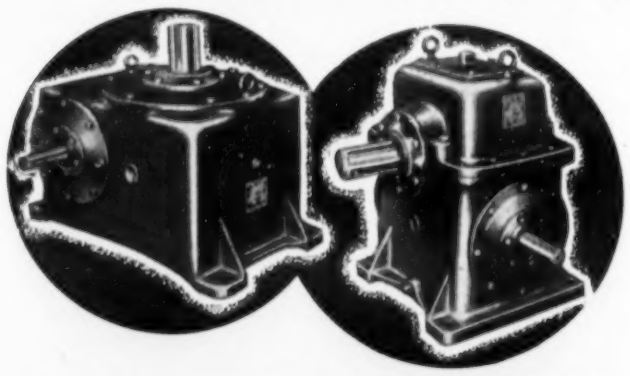
Comar relays stand up under severest operating conditions. They are engineered to far exceed normal performance and circuit requirements. Precision workmanship and top quality is your assurance of dependable operation. Comar specializes in relays custom-engineered to fit your needs. Send specifications for our recommendations, no obligation.

COMAR ELECTRIC COMPANY
3349 Addison St.
Chicago 18, Illinois

Write For Free Catalog

Relays • Transformers • Solenoids
Switches • Coils • Hermetic Sealing

If you write maker identify as IEN - 9215



HYGRADE WORM GEAR *DRIVES*

. . . assure smooth, trouble-free operation and better power transmission.

New developments in manufacture provide precision generated gears which give improved performance and greater load-carrying capacity.

Available in horizontal, vertical and Hytop designs. Ratios up to 4108 to 1 or higher when required.

Write for Bulletin HGB

FOOTE BROS. GEAR AND MACHINE CORPORATION
Dept. IEN, 4545 S. Western Blvd. • Chicago 9, Illinois

FOOTE BROS.
Better Power Transmission Through Better Gears

NEW LITERATURE—Concluded

Identify as **IEN - 0652**

STAMPINGS . . Method of making stampings in small lots in sizes to 22 by 22 in. is described in detail by 24-page "Metal Stampings" booklet. Please use your letterhead. Dayton Rogers Mfg. Co., 2822-26 13th Ave., Minneapolis 7, Minn.

Identify as **IEN - 0653**

STRAPPING . . Steel strapping to fasten thermal insulation in place on pipes, tanks, towers is subject of new 4-page Bulletin AD-120 which illustrates two application methods and describes available types, sizes, equipment. Acme Steel Co., 2854 Archer Ave., Chicago 8, Ill.

Identify as **IEN - 0654**

STRAPPING . . Steel strapping with integral fingers to hold duct insulation in place, a heavy duty outfit for palletizing, and a belt kit to use in out-of-the-way places are covered by catalog pages 710-80, 710-52, 710-15A. A. J. Gerrard & Co., 1948-52 Hawthorne Ave., Melrose Park, Ill.

Identify as **IEN - 0655**

SPECTROGRAPHIC TESTING . . Microphotometer in two designs, one for rapid routine analysis of metallurgical samples, the other for research. Catalog EM9-90(2), 12 pages, covers both and gives specifications. Leeds & Northrup Co., 4934 Stenton Ave., Philadelphia 44, Pa.

Identify as **IEN - 0656**

TRUCKS . . Pocket Catalog 535 contains 100 pages of information on fork trucks, pallet trucks, tractors, electric and hand lift trucks, skids, portable elevators, cranes, steel storage racks, drum handling equipment. Barrett-Cravens Co., 4609 S. Western Blvd., Chicago 9, Ill.

Identify as **IEN - 0657**

POWER LIFT TRUCKS . . "Reach Fork", company's fork truck with the "boarding house reach", is one of many electric lift trucks, hand hydraulic lift trucks, portable elevators and elevating tables presented in 4-page Bulletin 209. Raymond Corp., 35107 Madison St., Greene, N. Y.

Identify as **IEN - 0658**

PLUG VALVES . . How to lubricate Nordstrom valves is given by picture instructions in 12-page Bulletin V-220 along with information on three lubricant types, one of which is compressible. A chart recommends lubricant to use in service with some 450 chemicals and products. Rockwell Mfg. Co., 624 N. Lexington Ave., Pittsburgh 21, Pa.

Identify as **IEN - 0659**

VALVES . . Shown in 16-page Bulletin 1252 is the Twistite bin valve, a rubber sleeve which is twisted by a rotating collar. Gates, air lock valves, discharge spouts are included. Stephens-Adamson Mfg. Co., 231 Ridgeway Ave., Aurora, Ill.

Identify as **IEN - 0660**

WIRE ROPE SLINGS . . Tapered sleeve splice is the feature of company's All-Purpose sling, supplied in ¼ to 2¼-in. wire rope. Dimensions, vertical and choker rated capacities, in 4-page "All Purpose Sling". John A. Roebling's Sons Corp., 612 S. Broad St., Trenton 2, N. J.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

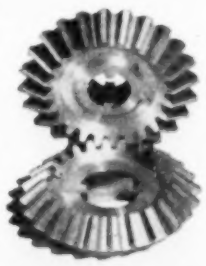
If you write maker identify as IEN - 9216

D. O. James

Established 1888

GEARS For INDUSTRY

SINCE 1888 . . . We have been making many types and sizes of gears for industry. Vast plant facilities of the most modern gear cutting equipment assure capable handling of your *production* or *special* gear requirements.



HELICAL and BEVEL GEARS—From 1" to 60" in diameter and from 24 DP to 1½ DP.
SPUR GEARS—Size range from ¾" to 150" in diameter. 32 DP to ¾ DP.
HERRINGBONE GEARS—Made from 1" to 60" in diameter and from 10 DP to 1½ DP.
SPIRAL BEVEL GEARS—Made from 1" to 30" in diam. and 24 DP to 1½ DP.
WORM GEARS — Made from 1" to 100" in diam. and from 24 DP to 1 DP.

YOUR GEAR INQUIRIES WILL RECEIVE IMMEDIATE ATTENTION
D. O. JAMES GEAR MANUFACTURING COMPANY
1140 W. MONROE ST. • CHICAGO 7, ILL.

If you write maker identify as IEN - 9217

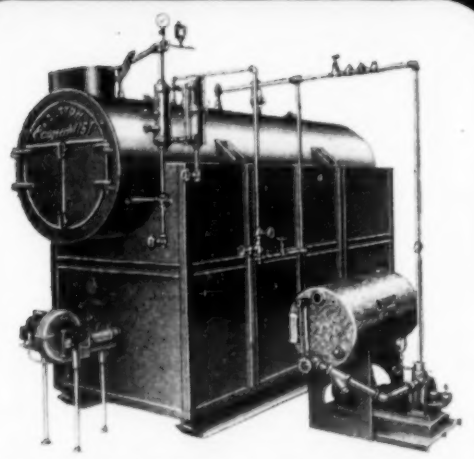
32 Pages of Helpful Information on Dust Recovery Systems

If you are now using dust or fly ash recovery equipment in your plant—or are planning installation of such equipment now or later—you will find this 32 page Multiclone booklet full of helpful information. Illustrations and diagrams outline basic principles of dust recovery and how to utilize them for maximum efficiency . . . how to simplify your installations . . . how to conserve valuable plant space . . . how to get high recovery over a wide range of particle sizes, etc. *A copy of this booklet should be in your files for reference and assistance in dust recovery applications. A free copy will gladly be sent you on request. Write today while supplies are adequate*

WESTERN *Precipitation* CORPORATION
ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS
Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 N. La SALLE ST. BLDG., CHICAGO 2
1429 PEACHTREE ST. N.E., ATLANTA 5 • HOBART BLDG., SAN FRANCISCO 4
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as IEN - 9218

CUTS YOUR STEAM COSTS
ON ANY FUEL!
THE *Dutton*
EconoMIST
AUTOMATIC "PACKAGED" BOILER



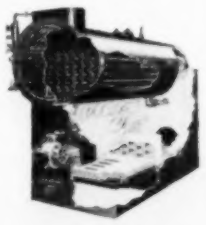
HERE'S THE RIGHT BOILER to give you plenty of steam for heating or processing—at rock-bottom cost for fuel! You can choose any fuel or firing method *now*, yet convert later to gain full benefit of future fuel price changes. Also, the famous EconoMIST gives you the tremendous dependability and simplicity of operation of efficient, H.R.T. design.

GET THESE EconoMIST features: Welded Boiler Shell, X-Ray Inspected — Greater Combustion Space — Less Heat Loss — Lower Cost for Installation, Operation, Maintenance — Sizes from 15 to 105 H.P. available as complete "packaged" units ready to connect — or as basic units less accessories.

CONVERTIBLE FOR FIRING BY HAND • STOKER • LIGHT OIL • HEAVY OIL • GAS

HIGHLY POPULAR with Food Processors, Dairies, Hospitals, Hotels, Institutions, Industrial Plants, Dry Cleaners, etc.

GET ALL the details on how the Dutton EconoMIST will cut *your* steam costs!



Four Boiler Types — Sizes From 5 to 250 H.P.

Write for Bulletin EC-52M

CHECK FIRST with *Dutton*
Dutton **BOILERS**
DIVISION HAPMAN-DUTTON COMPANY
KALAMAZOO, MICHIGAN • BOILER BUILDERS SINCE 1880

If you write maker identify as IEN-9220

REALOCK FENCE

gives **locked-in** protection

All fittings on Realock Fence have bolts so placed that nuts cannot be removed from the outside. This means that Realock Fence provides *added protection* for your grounds and property . . . effectively discourages tampering by would-be trespassers.

Strongly constructed, Realock Fence has high resistance to the elements because of a special galvanizing process . . . gives permanent protection and trouble-free service year after year. For additional information write our nearest sales office or consult your classified telephone directory.

THE COLORADO FUEL AND IRON CORPORATION—Denver, Colo.
PACIFIC COAST DIVISION—Oakland, Calif.
WICKWIRE SPENCER STEEL DIVISION—Buffalo, New York

REALOCK FENCE
THE COLORADO FUEL & IRON CORPORATION
CF&I
BRANCHES IN ALL KEY CITIES

If you write maker identify as IEN-9221

ANNOUNCEMENT:

Effective August 1, 1953,
American Ventilating Hose Co.
is changing its name to

THE FLEXAUST COMPANY

Manufacturers of

FLEXAUST*, the durable, flexible, spiral-wire reinforced hose for moving air, gases and materials via pressure, suction or gravity.

PORTOVENT*, the economical, portable spiral-wire reinforced ducting with excellent lengthwise compressibility.

BLOFLEX*, a non-reinforced hose for blower applications only.

Write for literature and prices.

THE FLEXAUST COMPANY
DIVISION OF CALLAHAN ZINC-LEAD COMPANY, INC.
100 Park Avenue, New York 17, N. Y.

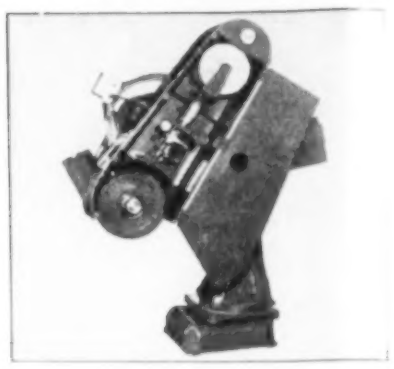
*Trade-marks

If you write maker identify as IEN-9222

If you write maker identify as IEN-9223

POLISHING . . Pneumatic attachment for abrasive belt on polishing machine

Source: DIVINE BROTHERS CO.
208 Seward Ave., Utica 1, N. Y.



For machines now in use

Model DL is a new air operated idler wheel attachment to apply on a standard polishing or buffing machine with a contact wheel that mounts on the machine spindle. Connection is made to a shop source for air pressure through a regulating valve and pressure indicator to set and maintain tension in the belt. An operating valve relieves and applies pressure when the belt is to be changed. The attachment includes a belt tracking adjustment and a steel enclosure with a hinged door. This door is shown in open position for access to the mechanism.

The abrasive belt measures 120 in. in length. Two widths are 4 and 6 in., in standard construction, to 10 in. on special order. Required line pressure is maximum at 125 pounds. Maximum gage pressure is 100 lb. while 40 lb. is sufficient to maintain correct tension in a 4-in. belt. Weight of the attachment, for a 6-in. belt, is about 180 pounds.

If you write maker identify as IEN-9224

CONTROL . . Electronic equipment for oil, gas, coal burner operation

Source: COMBUSTION CONTROL CORP.
718-22 Beacon St., Boston 15, Mass.

Factory Mutual Approved

Flush type enclosures are now available for the Series 26 flame failure safe-guard control, previously described IEN-1232-52. Included are the Fireye Type FP-2 for starting and operating flame failure protection in gas, oil or gas-oil burners and the Type FP-4 unit for starting and operating protection on manually or semi-automatically ignited gas, oil, pulverized coal or combination fuel burners. The new assemblies can be mounted on a combustion control power panel with the control wiring concealed at the rear of the panel.

Operation centers at a Firetron tube that supervises the pilot and the main flame. Detail illustrated information is available in Bulletins CP 520 and CP 519.

If you write maker identify as IEN-9225

CASTINGS . . Stainless steel for application in corrosive service

Source: COOPER ALLOY FOUNDRY CO.
212 Bloy St., Hillside 5, N. J.

Technical data upon request

Alloy V2B designates a new stainless steel of the 18-8 type. The company is prepared to supply it in cast or wrought form to specification. Typical applications include valve discs, plug cocks, shaft sleeves, impellers, pump casings, wear rings, conveyor links, rollers, gear blanks.

The steel combines hardness with non-galling characteristics and excellent corrosion resistance. It is machinable in the quench annealed state and can be hardened by a low temperature heat treatment. It can be welded in annealed condition using rods of the same material. It is suited for service where temperature reaches 1,400 deg. F. It is resistant to sulphuric, hydrochloric, phosphoric acids and their salts.

If you write maker identify as IEN-9226

WEIGHING . . Dial type scale, five sizes for 60 to 300 pound load

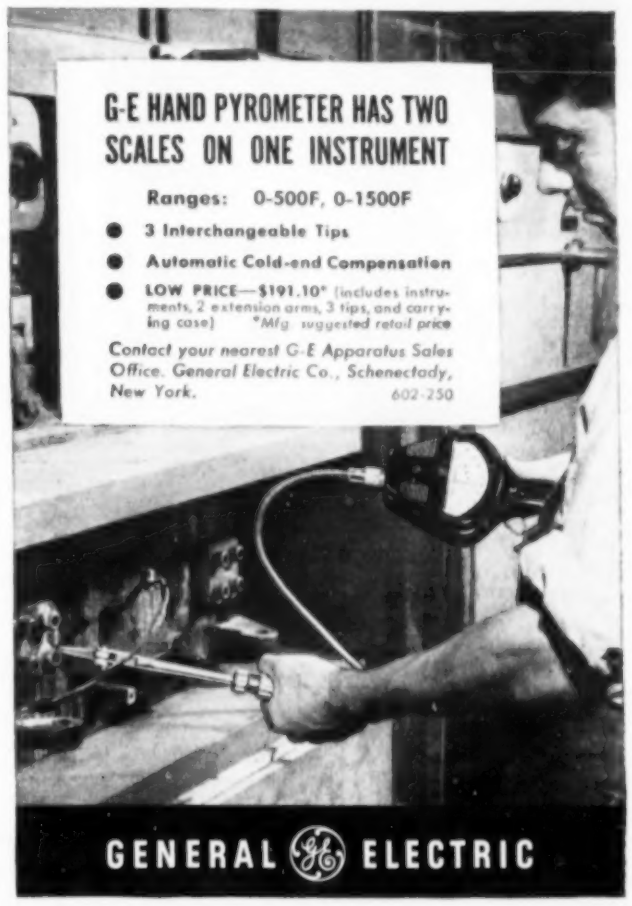
Source: PENN SCALE MFG. CO.
148-52 W. Berks St., Philadelphia 22, Pa.

The Weigh Fairer

The mechanism of this new Series 1200 scale is enclosed and protected back of the dial face. The dial measures 10 in. in two scale sizes rating 60 and 100 pounds. It is 12 in. in diameter in three ratings from 100 to 300 pounds. It is mounted on a tubular column secured to the platform base. Two standard heights are 36 and 52 inches. The platform measures 10½ by 14¼ inches. Finish is black wrinkle.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9227



If you write maker identify as IEN-9228

NEW!

Delpark Filters for Paint Spray Booth Water

Now—through the use of Delpark industrial filters and automatic skimming, paint spray booth operation is more efficient. Hand-skimming, necessary with former methods, is eliminated. Fouled water spray jets and eliminators no longer interrupt spray booth operation. Clean-up labor and spray booth maintenance are reduced to a minimum.

Write today for information on the Delpark Paint Spray Booth Filter now in use in many large automotive plants.

INDUSTRIAL FILTRATION COMPANY
95 INDUSTRIAL AVE. LEBANON, INDIANA

If you write maker identify as IEN-9229

NOT THIS...

Now... for a good shower

—deep freeze!

—scalding hot!

BANISH "BOOBY TRAP" SHOWERS

Use POWERS THERMOSTATIC Water Mixers

BUT THIS

Real comfort and safety. No waste of time or hot and cold water.

POWERS THERMOSTATIC WATER MIXERS

—eliminate shower accidents

They are completely automatic, hold shower temperature wherever you want it regardless of **pressure** or **temperature** changes in water supply lines. Failure of cold water instantly shuts off the shower.

Tests prove Powers is safest shower regulator made for factories, schools, hospitals, hotels and clubs. Thousands now in use.

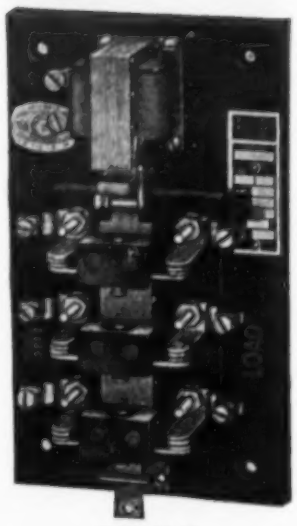
Used for Many Industrial Processes. Users report control within ½° F. Temperature Ranges: 65-115° F., 60-125° F., 75-175° F. Write for Bulletin 365. (b13)

THE POWERS REGULATOR CO.
Skokie, Ill. • Offices in Over 50 Cities • Est. 1891

If you write maker identify as IEN-9230

NEW ZENITH MAGNETIC SOLENOID CONTACTORS

★ SOLENOID OPERATED
★ FINE SILVER CONTACTS
★ SIMPLIFIED WIRING



TYPE SC 33

This ZENITH contactor is built to withstand the severe service demanded by loads based on Type-C lamps.

It is designed on the straight-line principle, with the solenoid being connected directly to the contact bar.

The advantage of this method of construction is its easy access to any part for quick inspection or service, without disturbing other parts.

Models: Size 1 — 25 amps. Size 2 — 50 amps.

Either size can be supplied in any number of poles.

SEND FOR FREE CATALOG

This big, illustrated catalog contains all the newest items in automatic control equipment made by Zenith! Write now for your Copy!

ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

If you write maker identify as IEN-9231

FOR FASTER AND EASIER DRILLING ANY SIZE HOLE IN ANY MASONRY MATERIAL

Cyclo-twist
Cyclo-Core
Thunder-twist
Thunder-Core

CARBIDE-TIPPED BITS
For Drilling Holes 1/8" To 6" Diameter in
TILE · BRICK · CONCRETE · GRANITE
or any other Masonry Material

The Complete Line That Answers *THESE* Questions Before You Start The Job!

HOW BIG?
3/16" to 6" diameters in fractional sizes.

HOW DEEP?
Over all lengths from 3" to 18" and to 36" or more with extensions.

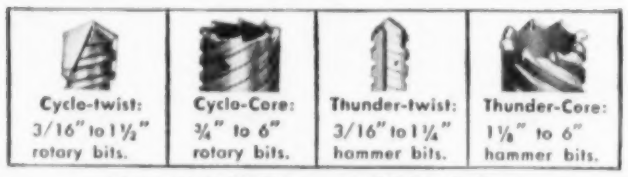
HOW HARD?
Any masonry material from plaster to granite.

HOW FAST?
One inch a minute is commonplace in concrete.

WHAT POWER?
All leading makes from hand brace to electric or pneumatic rotary or hammer drills.

Take the time-and-expense gamble out of any drilling job. The guesswork has been engineered *out* — the known performance has been engineered *in* — by exacting test and practical proof on toughest jobs. Every detail is yours in our easy-to-use Guide Chart. Check these superior features of the world's only complete Masonry Bit Line:

- ***Special Tungsten-Carbide Tips brazed to alloy steel shank.***
- ***Each Carbide Cutting Edge has its own spiral dust exit — removes dust fast.***
- ***Carbide Tip Cutting Diameter equals body diameter for maximum strength.***
- ***Every Useful Accessory for precision centering and efficient use of power.***



Cyclo-twist:	Cyclo-Core:	Thunder-twist:	Thunder-Core:
3/16" to 1½" rotary bits.	¾" to 6" rotary bits.	3/16" to 1¼" hammer bits.	1⅛" to 6" hammer bits.

Special BUY and TRY Offer

If your supplier does not stock and display the New England Carbide Line — you can order direct any two Cyclo-twist bit-sizes you use most — by filling out and mailing the Action Coupon below. We will send promptly and postpaid (including Guide Chart and price list of entire Carbide Bit Line) through the local merchant you specify:

NEW ENGLAND CARBIDE TOOL CO., INC.
60D Brookline Street, Cambridge 39, Mass.

Cyclo-twist: Standard lengths x diam.: 3/16" or ¼" — $1.80 · 5/16" — 1.95 · ⅜" — 2.15 · 7/16" — 2.40 · ½" — 2.70 · 9/16" — 3.00 · ⅝" — 3.30 · 11/16" — 3.75 · ¾" — 4.20 · ⅞" — 5.10 · 1" — 7.20 · 1⅛" — 8.70 · 1¼" — 10.50 · 1½" — 12.90. Extra shank lengths stocked and available: 12", 20", 28", 36" — at proportionate extra cost.

— — FILL OUT AND MAIL THIS ACTION COUPON NOW — —

New England Carbide Tool Co., Inc., 60D Brookline St., Cambridge 39, Mass.

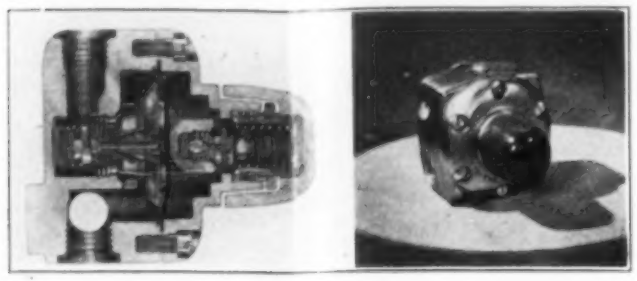
Please send through the supplier, noted below, two (2) Cyclo-twist Carbide Tipped Bits as specified. I will pay my supplier on delivery.

( ) Cyclo-twist Bit (Rotary type) Standard length by diameter .....
( ) Cyclo-twist Bit (Rotary type) Standard length by diameter .....
Dealer Name & Address .....
.....
Your Name .....
Address .....City .....State .....

If you write maker identify as IEN-9233

VALVE . . Pressure regulator controls the air in paint spray line

Source: DE VILBISS COMPANY
305 Phillips Ave., Toledo 1, Ohio



Lists at $19.30

Type HAA is a new regulating valve with which air pressure can be controlled in a line to spray painting equipment. It has capacity to handle 80 cfm. with pressure at 100 pounds. It is available in two arrangements of inlet and outlet connections. Regulation can be maintained to within 6 lb. below main line pressure. Maximum regulated pressure is 130 lb. and maximum main line pressure is 250 pounds.

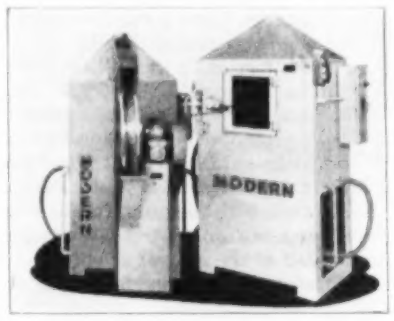
Supply pressure enters and fills the housing below the main valve, near the bottom, and below the pilot valve that lies under the diaphragm controlled by the adjusting knob. The air can go no further until pressure is applied by turning the knob. Then the pilot is unseated and the control air applies on the main diaphragm. This depresses the diaphragm, opens the main valve and air flows through.

Flow continues until pressure builds, below the pilot diaphragm, to balance the spring pressure and the pilot valve closes to a point of balance between the incoming pressure and the adjusted outlet pressure. Outlet connections are threaded for ¼ and ⅜-in. pipe. Dimensions are 3 by 4½ inches.

If you write maker identify as IEN-9234

BURRING . . Abrasive blast machine cleans burrs from finished work pieces

Source: MODERN INDUSTRIAL ENGINEERING CO.
14228-32 Birwood Ave., Detroit 4, Mich.



For "soft" metal parts

Maizo Blast designates a new blast cleaning machine available in two designs for small and large work pieces made of soft metals, such as aluminum. It also will handle work made of mild steel. In both, maize, or a similar "soft" material, is blasted dry against the work at air pressure of 60 to 80 lb. from a shop air line or other pressure source.

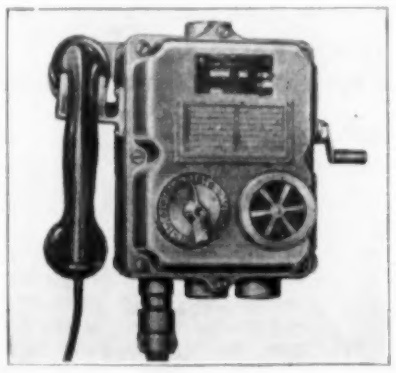
The machine, shown to the left, employs a wheel type fixture carrying wires on which the work is positioned after the wires are bent to suitable shapes. The wheel carries the work between 2, 4 or 6 blast guns mounted for oscillation by a motor driven crank. Used blast material falls to a hopper at the base of the machine where it is picked up by the air stream for recirculation. Dust, resulting from the operation, is removed by suitable exhaust equipment connecting at the housing top. This machine is known as Model MA-24. It will produce at the rate of 190 to 290 pieces per hour.

Larger pieces, not suited for the continuous machine, can be handled in Model MA-1, shown to the right. Here the parts are placed on a rotating fixture to come under the blast guns.

If you write maker identify as IEN-9235

COMMUNICATING . . Magnetic phone, safe to use in explosive atmospheres

Source: CROUSE-HINDS CO.
7th North & Wolf Sts., Syracuse 10, N. Y.



No tinkling bell

Explosion proof construction is now available for the U. S. Instrument Company telephone, previously described IEN-10595-49. The mechanism is enclosed in a two part aluminum housing with accurately machined joints and large holding screws. The instrument is safe to use in hazardous locations. An installation can include two or more units over an area covering 30 miles and with no power needed.

The user's voice causes fluctuations in the magnetic circuit in the transmitter to create electric impulses that are transmitted to the receiving instrument. The pulses are changed there to sound waves to reproduce the speaker's voice. Signaling is by a magneto powered howler.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9236

AIR CYLINDER WITH CHOICE OF BUILT-IN VALVES

The Bellows Air Motor—the only air cylinder with *built-in* valve and operating controls — now offers a choice of six separate valving arrangements. Now the engineer can choose the method of valving he prefers and still have all the advantages that integral construction means: jet-quick action, compactness, sure-fire control, simple installation.

Learn more about this newest development in the Bellows Air Motor. Write for your copy of Bulletin CL-50, just off the press. Address Dept. IEN-853.

The Bellows Co.
ESTABLISHED 1911
AKRON 9, OHIO

701A

If you write maker identify as IEN-9237

Typical, is this model train transformer application of Indicating Action. Real "sell action" here with the two Sterling meters providing informative interest and appealing movement.

How about your product — would an electrical or mechanical indicating device improve its eye appeal and buy appeal? Or perhaps you're dreaming of a new toy, gadget or atomic whatsit that needs an indicating instrument. Let's talk about it—perhaps we can help you, now.

STERLING IDEAS
SEE THEM NOW!

This file folder is chock-full of information on Sterling meter models (A.C. and D.C. Panel, Resistance, Pocket in Ammeters, Voltmeters, etc.) plus examples of specially designed indicating meters for interesting applications. Send for your copy today.

STERLING
MANUFACTURING COMPANY
7201 Wentworth Ave.
CLEVELAND 2, OHIO

If you write maker identify as IEN-9239

ECONOMICAL

STAMPED PARTS IN SMALL QUANTITIES

Yes, it *is* possible—but it's a special skill of ours.

It's done with a new price-slashing method of making dies, used in conjunction with special machinery. In other cases we use custom equipment for die-less duplication by our own Machine-Cut Method.

FOR EXPERIMENTAL OR PRODUCTION REQUIREMENTS at rock-bottom prices, send us your blueprints. And make sure you get our latest, fact-packed literature.

STAMPINGS DIVISION

"ONE PIECE OR ONE MILLION"

LAMINATED SHIM COMPANY, INC.

2108 UNION STREET • GLENBROOK, CONNECTICUT

If you write maker identify as IEN-9240

SAVE *money, maintenance, man-hours!*

GET YOUR DC FROM AC

with dependable, long-life

Federal

SELENIUM RECTIFIER POWER-CONVERTING EQUIPMENTS

No costly, bulky, moving equipment to buy . . . no expendable parts to replace frequently . . . virtually no maintenance. No wonder Federal's rugged, dependable Selenium Rectifier Equipments are the growing answer to DC output needs . . . for industrial power supply, battery charging and hundreds of other DC applications.

Equipments are ready to connect to AC . . . ready to deliver uninterrupted service.

For data on available FTR equipments, or any desired rating, write to Dept. E-223

Federal Telephone and Radio Corporation

SELENIUM-INTELIN DIVISION

100 Kingsland Road — Clifton, N. J.

If you write maker identify as IEN-9241

INSTANT, ACCURATE READINGS AND SETTINGS . . .

Distinctive Appearance for your instruments!

NOW you can give your instrument panels distinctive appearance—as well as greater convenience and accuracy—with the new easy-to-read RA Precision DUODIAL . . .

- *Designed for accurate readings on multi-turn rotational devices (such as helical potentiometers, coils, threaded positioning devices, etc.) the RA provides two scales . . . an inner to show rotational position in a full 360° circle, and an outer to show number of turns (up to 15) completed from "zero" point.*
- *Unique jump mechanism allows outer dial to remain stationary until inner dial has completed full revolution—then dial "jumps" to next numeral. Assures quicker readings—greater accuracy. Together, dials give a direct decimal reading—without interpolation—for 10-turn components such as Model A Helipots.*
- *Vibration-proof lock is instantly set to hold reading—as quickly released for new setting.*
- *Completely pre-assembled, installation is quick and simple. Fits both thick and thin (⅛" and less) panels.*

The precision "feel" and handsome appearance of the RA DUODIAL—recessed black numerals on satin chrome dial with non-metallic parts of black nylon—add quality and distinction to the finest instrument panels. *Write for Data File # 812*

The new turns—indicating MODEL RA *Precision* **Duodial**

See one . . . try one . . . get complete details on the Model RA Precision DUODIAL from your nearest HELIPOT representative. Or write direct!

THE **Helipot** CORPORATION

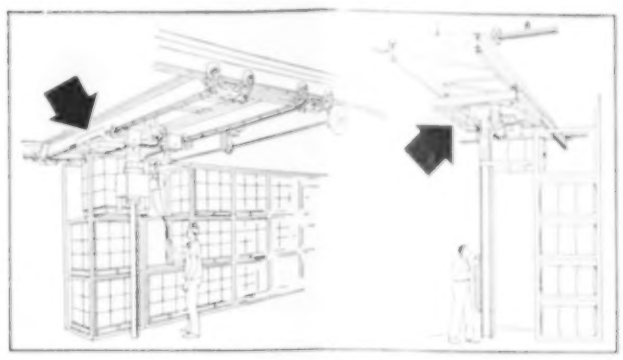
A subsidiary of Beckman Instruments, Inc.

SOUTH PASADENA, CALIF.

If you write maker identify as IEN-9242

CRANE . . Overhead assembly travels, rotates, lifts load forks

Source: AMERICAN MONORAIL CO.
13111 Athens Ave., Cleveland 7, Ohio



Bulletin AMS-1

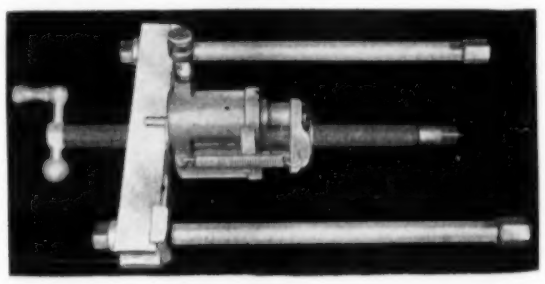
Load forks ride a vertical column suspended from a combination hoist and turntable mechanism mounted in the carriage of this new Stacker crane. The carriage is wheel mounted on the crane bridge. The crane will handle loads to 2 ton. It will pick them up from the floor or from another conveyor or from any position in storage in the area covered. It will carry them along longitudinal and cross aisles for delivery or deposit in another position. It will operate in aisles measuring a little over 5 ft. in width.

One installation, handling cellophane rolls weighing ½ ton each, serves to store these rolls in racks to 14 ft. in height. All motions of this particular crane are controlled by push buttons at floor level. The mast is automatically centered in front of each rack position. The overhead equipment is the company's standard Monorail design with motor driven traction wheel travel for both the carriage and the bridge.

If you write maker identify as IEN-9243

PULLING . . Hand hydraulic tools also to push, rate 17½ to 50 ton

Source: OWATONNA TOOL CO.
371 Cedar St., Owatonna, Minn.



Hydraulic Bulletin HY-1953

Capacity is increased from 17½ to 50 ton in this new extension of the company's line of pushing and pulling tools, previously described IEN-9047-51. Four sizes are available in the 17½ to 50-ton range with attachments and adapters to apply the hand hydraulic power. Users who now have the screw operated push-puller can adapt it for use with the center hole hydraulic ram by ordering a new attaching plate.

If you write maker identify as IEN-9244

SAWING . . Hacksaw blades in range of sizes for machine use

Source: ILLINOIS TOOL WORKS
2503 N. Keeler Ave., Chicago 39, Ill.

Specifications upon request

Illinite trade names a new line of power hacksaw blades. The line includes a composition blade with a high speed cutting edge welded to a tough shock resistant chrome-vanadium steel back. This unit is known as the DuWeld blade. A second design is made throughout of heat treated high speed steel. Teeth are precision set. The pin hole area is heat treated to prevent deformation under tension.

If you write maker identify as IEN-9245

PROTECTING . . Nylon tarpaulin, vinyl coated, reinforced grommets

Source: SPRINGFIELD TENT & AWNING CO.
337-41 W. Clark St., Springfield, Ohio

Strong, light and durable

Vinyl coated nylon is available in tarpaulins of specified sizes and also in fitted and flat covers for all makes and sizes of trucks and trailers. The material is resistant to attack by gasoline, oil, chemicals, mildew, abrasion.

It does not age, is water proof and serviceable in a range between minus 57 and plus 180 deg. F. Weights are 5 and 9 ounces. Finished sizes, with double stitched hems, seams and reinforced grommets on 3-ft. centers, list at 28 and 42 cents per sq. ft. in the two weights.

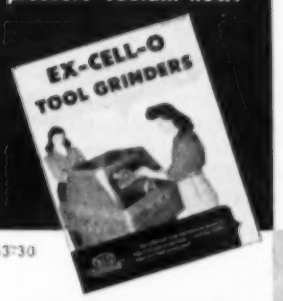
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9246

Tool Grinders by Ex-Cell-O

XLO

STYLE 44-A, Ex-Cell-O Precision Carbide Tool Grinder. A new model for sharpening single point tools. Inbuilt motor precision grinding spindle. Ample pressure coolant flow.



53730

WRITE FOR THIS BULLETIN

For Carbides, Cast Alloys, Hi-Speed Steels . . .

A complete line of grinders, for efficient and economical sharpening of single point tools. All are double-end models using cup type wheels; with large tool rest tables, easily adjusted.

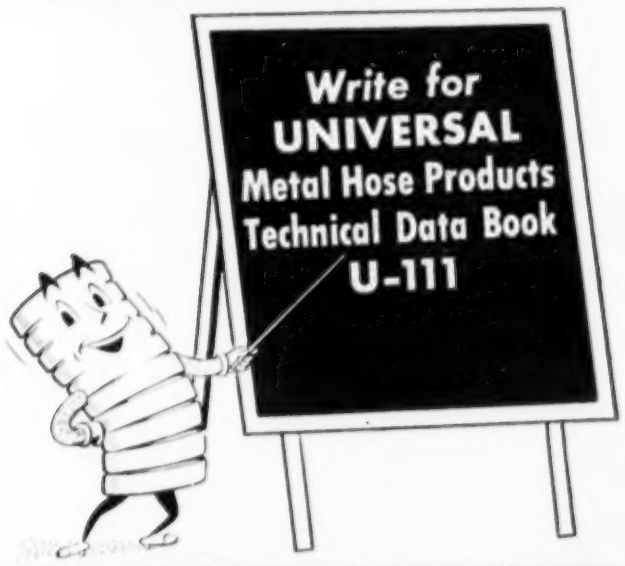
EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

It shows and describes five models; also gives important data on tool grinding. Address Ex-Cell-O in Detroit today; ask for BULLETIN 46262.

If you write maker identify as IEN-9247

QUICK DELIVERIES ON

UNIVERSAL
***Flexible* METAL HOSE**



UNIVERSAL METAL HOSE CO.

2131 South Kedzie Avenue — Chicago 23, Ill.

If you write maker identify as IEN-9248

Look over the South Bend 13" lathe. The reason for its popularity is evident, for where a variety of precision parts is to be machined the 13" is at its best. This quality-built lathe combines easy and accurate operation with quick job change-over. Write for complete details.

PLEASE SEND INFORMATION CHECKED:

☐ 9" to 16-24" LATHES ☐ DRILL PRESSES ☐ 7" BENCH SHAPERS ☐ TOOL GRINDERS ☐ ½" & 1" Collet TURRET LATHES

Name _____ Company _____

Street _____ City & State _____

SOUTH BEND LATHE • South Bend 22, Indiana

If you write maker identify as IEN - 9249

Get positive contact dependable service with

STALEY METALLIC MERCURY SWITCHES

- *No switch points to burn, pit or stick!*
- *No glass to break!*

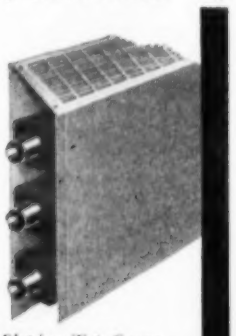
Day in, day out — year in, year out — millions of Staley Metallic Mercury Switches make positive mercury-to-mercury contact . . . give life-long, trouble-free service. Metal cap and body. Refractory breaker shields and de-ionized arc in inert gas. High degree of safety even in explosive atmosphere. Available in two types: Non-insulated for clip mounting. Insulated and provided with flexible terminals. Write today for descriptive bulletin. Specify Dept. IEN-405.

ELECTRIC SWITCH CORP.
1304 E. ELEVENTH STREET • COLUMBUS, INDIANA

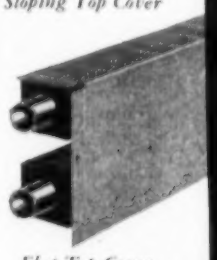
If you write maker identify as IEN - 9250

DUNHAM FIN-VECTOR RADIATION

Heats "just right" at *any* height



Sloping Top Cover



Flat Top Cover

Expanded Metal Cover

Any height above four inches from the floor is "just right" with Dunham Fin-Vector along outside walls.

Materials used provide rapid heat transfer. Choices of pipe and fin sizes and fin spacing assure adequate heat.

Easy to Install

Fin-Vector is light in weight, needs few supports, requires little on-the-job cutting, speeds assembly.

Three cover designs available with complete line of accessories to form tight, sturdy, "finished" looking installation.

For further information, write to Dept. 11, for File 1256-61.

C. A. DUNHAM CO.
400 W. Madison St. • Chicago 6, Illinois

DUNHAM

Quality first for fifty years

If you write maker identify as IEN - 9251

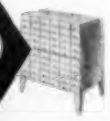
WITH THE NEW

SAVE TIME, SPACE AND EXPENSE — MICROCARD SYSTEM

18,600 FULL SIZE RECORDS FILL 31 (4-DRAWER) FILES

AT A COST OF ABOUT $6,400.00

IN MICROCARD FORM THESE RECORDS CAN BE STORED IN ONE SMALL CARD FILE



AT A COST OF ABOUT $400.00

Spend pennies now where dollars were disappearing! New MICROCARD SYSTEM is the economical, quick to find, read, and refile method of record storage. Figures available on your industry application.

WRITE TODAY For Complete Information.

MICROCARD CORP. • READER DIVISION
Box 314D • La Crosse, Wisconsin

Arrangements made with Kodak Ltd. of England to produce a similar reader.

If you write maker identify as IEN - 9252

TESTING . . Saybolt viscosimeter for laboratory application on oils

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.

Modernized design

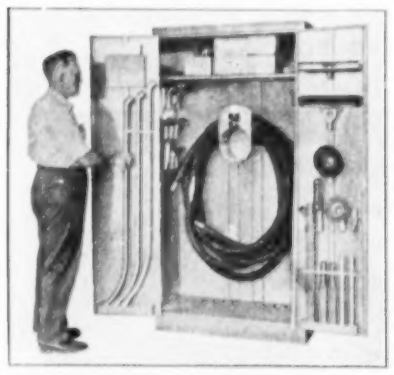
Oil samples can be held within 0.02 degree F. in a temperature range between 60 and 220 deg. F. in this recently redesigned viscosimeter. The bath is made of spot-welded and soldered stainless steel. A drain overflow holds the bath level at required height on the Saybolt tubes. Temperature is brought up by a variable input heater rating 1,000 watts. It is controlled by a variable voltage transformer that is adjusted by turning a dial on the front panel. A 50-watt intermediate heater holds the bath at desired temperature.

Curved baffle plates direct liquid flow from stirrer and heater past the thermostat and tubes and back to the stirrer. Two copper coils, at rear of the bath, circulates coolants when temperature is to be held at about that of the room. Four standard Saybolt tubes can be used at one time. They are grouped at the front of the bath. The equipment is supplied with an oil pipet, four thermometer guards, a tube cleaner, a 100 mesh oil strainer, and 5 gal. of the company's stabilized bath oil. List price is $325.

If you write maker identify as IEN - 9253

CLEANING . . Accessory cabinet for vacuum hose, tools and supplies

Source: U. S. HOFFMAN MACHINERY CORP.
105 Fourth Ave., 9th Floor, New York 3, N. Y.



Locks when closed

Orderly storage is provided for the accessory equipment employed with the company's line of industrial vacuum cleaning equipment by this new cabinet. It measures 40 in. in width by 18 in. in depth by 78 in. in height. It is made of 18-gage steel in reinforced welded assembly. There is a 12 by 14-in. shelf for replacement items, wall brackets for 100 ft. of 1½-in. hose and for miscellaneous tools. Hooks on the inside provide for hanging up small accessories. Large tools and rods can be placed inside the doors. A pocket is included for operating and maintenance instructions.

If you write maker identify as IEN - 9254

VENTILATING . . Fabric duct, wire reinforced, for pressure, suction

Source: FLEXAUST COMPANY
100 Park Ave., Room 3415, New York 17, N. Y.

Will not collapse

Cotton or nylon fabric is impregnated with neoprene and is reinforced with a spiral wire in this new Portovent duct. The seams are bonded together so there is no stitching to loosen. Sizes range from 4 to 36 in. in inside diameter. Length is to specification. The duct is suited for fume exhaust and ventilating. It can be installed, transported and stored easily because it collapses longitudinally into a small space and is light in weight.

If you write maker identify as IEN - 9255

CLEANING . . Companion liquids to clean and protect metal surfaces

Source: LUMIN SALES CORP.
270 Park Ave., Room 1113, New York 17, N. Y.

Recommended for building trim

Lumin Cleaner and Lumin Wash are two new maintenance liquids to remove dirt, scum, deposits, finger prints from aluminum, bronze, stainless steel, and also from lacquered surfaces. A complete application starts with the cleaner and is followed by the wash to leave an invisible protective film that has normal life of several months.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9256

INCREASE PRODUCTION and LOWER COSTS!

PRESS-RITE
5 TON
Hi-Production
POWER PRESS

No. O 5 ton Hi-Production Press-Rite Press available in either bench or floor models.

Write Today for your FREE copy of the new Press-Rite bulletin giving specifications of the No. O 5 ton Hi-Production Press-Rite Press and other models of our complete line.

There is no better press on the market today. This 5 ton Press-Rite Press is built for high speed operation on long production runs. Outstanding safety features and dependable performance makes the Press-Rite No. O high production press the choice of leading manufacturers everywhere.

Sales Service Machine Tool Co. SSMT
PRESS RITE PRESSES • SHAPE RITE SHAPERS • KELLER POWER HACK SAWS
2363 UNIVERSITY AVENUE, ST. PAUL W4, MINNESOTA

If you write maker identify as IEN - 9257

BUSCHMAN CONVEYOR

overhead cable costing only $3800.00

SAVES $7000.00 ANNUALLY at Honeywell

Vertical curve of Universal Cable Conveyor inclines to convenient work height, utilizes overhead space.

A BUSCHMAN OVERHEAD CABLE COVEYOR SYSTEM replaces former manual handling method at MINNEAPOLIS-HONEYWELL REGULATOR CO. with resulting savings of $7000.00 annually on an investment of $3800.00. This does not include recovered floor space, reduced aisle traffic, easier working conditions and increased production.

It is anticipated that the overall total savings that will be realized by Minneapolis-Honeywell improved production methods in this instance is approximately $16,000.00 per year.

Why not investigate the possibilities of similar savings in your plant operations?

Write for NEW Bulletin No. 40

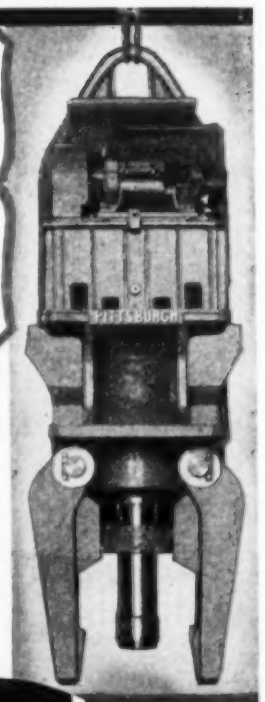
THE E. W. BUSCHMAN CO.
4479 Clifton Avenue, Cincinnati 32, Ohio
Representatives in Principal Cities

PRODUCE MORE . . . FOR LESS
Buschman Conveyors

If you write maker identify as IEN - 9258

PORTABLE INGOT STRIPPER

can do your job



- **MORE ECONOMICAL**
- **MORE FLEXIBLE**

than conventional equipment

Write today for complete technical data

pittsburgh ENGINEERING & MACHINE CO.
316 FARMERS BANK BLDG., PITTSBURGH 22, PA. • PLANT AT GLASSPORT, PA.

If you write maker identify as IEN-9259

For quick latchlocked plug-in it's the XL series

CANNON PLUGS

Quality microphone manufacturers use Cannon XL connectors as standard equipment. Designed for microphones, amplifiers, tape recorders, and similar applications, the moderately priced XL series incorporates many Cannon *quality* features—including full-floating socket contacts for perfect alignment and positive engagement.

XL connectors are available in 14 shell designs in plugs and receptacles, all with the exclusive easy-to-release latchlock. 1,400 v and 1,600 v ac maximum flash-over. Two insert arrangements available—three 15 a or four 10 a contacts.

Available from Cannon's franchised distributors or any recognized radio parts distributor. Write for new XL Bulletin.

CANNON ELECTRIC
Since 1915

CANNON ELECTRIC COMPANY, LOS ANGELES 31, CALIFORNIA

Factories in Los Angeles, Toronto, New Haven. Representatives in principal cities. Address inquiries to Cannon Electric Co., Dept. H-112, Los Angeles 31, Calif.

If you write maker identify as IEN-9260

PRODUCTION UP COSTS DOWN WITH Commander PRODUCTION TOOLS

Adjustable MULTI-DRILL

- Adjustable To Any Hole Pattern
- Drill 2 to 8 Holes at 1 Stroke
- Fits Any Drill Press

MODEL 900

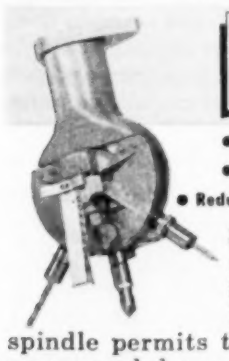
Increase production up to 800%—save time, cut costs. Mounted without alterations or special tools. 9" drilling area; centers to ½". Extension Spindles available to increase area to 22½". Special adaptations available.

"the tapper that thinks for its operator"

Commander TAPPER

- Wider Range . . . 1 Tapper Handles #0 to ¾" Taps
- Automatic Tap Protection
- Furnished to Fit Any Drill Press

Adjustable full range torque control instantly stops any tap when it's dull, loaded, strikes a hard spot, or bottoms in blind hole tapping. Assures maximum production, cuts rejects, even with inexperienced operators.



SELECT A SPINDLE

- Drills, Reams, Taps on 1 Drill Press Spindle
- Increases Production
- Improves Accuracy
- Reduces Costs
- Can be Used on Any Drill Press

Save time, reduce handling with a Commander SELECT-A-SPINDLE Dual Speed Turret Head. Speed selection on each spindle permits tapping, drilling, reaming at recommended speed. Taps on 1, 2 or all 3 spindles Positive indexing of head without stopping motor. Ruggedly built for high production work.

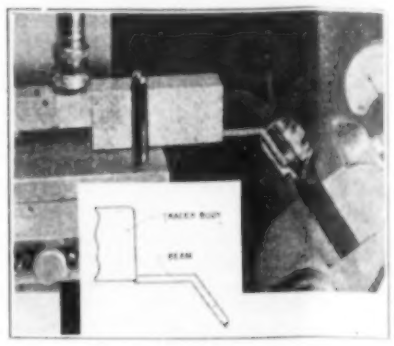
Write FOR CATALOG #851 and the name of your nearby Commander Distributor

Commander MFG. CO.
4219 W. KINZIE STREET
CHICAGO 24, ILLINOIS

If you write maker identify as IEN-9262

GAGE . . Profilometer tracer to check surface roughness on tapers

Source: MICROMETRICAL MFG. CO.
343-47 S. Main St., Ann Arbor, Mich.



Bulletin LT81

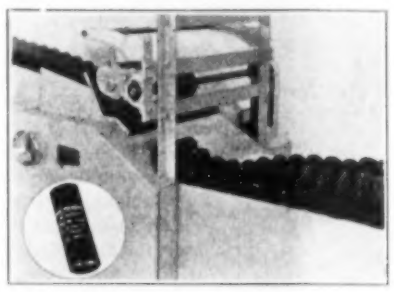
Tapers on internal shoulders and on surfaces that can be reached only with a "dogleg" beam can be checked for surface roughness by this new Type-KC tracer. It represents further development of the line of tracers for the company's Type KB Profilometer surface roughness gage, previously described IEN-6157-53. The new unit also can be used on other internal and external surfaces where the work can be mounted suitably or the work surface can be made approximately horizontal.

The tracer point has a vertical travel of 0.030 inch. This permits roughness measurement across curved surfaces where the chordal height does not exceed 0.025 inch. The point is at the end of the beam for mechanical movement by the Linear Pilotor which provides tracing speed of 0.1 in. per second. The point will enter a hole to a depth of a little under 1⅜ inch. Maximum horizontal reach to the end of the Pilotor slide is 2⅜ inches.

If you write maker identify as IEN-9263

MARKING . . Roll type machine to print on cylindrical work pieces

Source: ADOLPH GOTTSCHO INC.
6-D Terminal Road, Hillside 5, N. J.



For cans, cylinders

Codes, lot numbers, complete legends, can be printed on the sides of cylindrical work pieces, measuring 1 to 12 in. in diameter, by this new Auto-Cylindaprinter. Work length ranges from 1½ to 48 inches.

Copy change and adjustment for varying work can be made in a few minutes. Application can be made on fibre, paper, metal, plastic, at speeds to 80 pieces per minute. A reservoir holds an 8-hr. supply of quick drying ink. The machine measures 30 by 43 by 50 inches. Approaching work controls the printing action.

If you write maker identify as IEN-9264

PROTECTING . . Welder's goggle, ventilated design to prevent fogging

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Room 308, New York 17, N. Y.

Comfortable fit

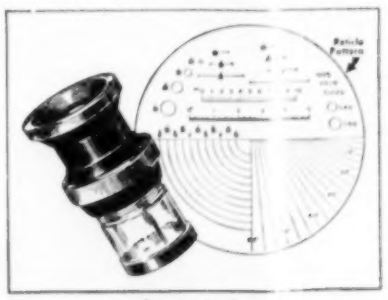
Sixteen vents are located behind the lens retaining rings in the new Oxweld No. 24 Coverall goggle. They permit continuous circulation of air across the inside surface of the lenses so the goggle will not steam up or fog in hot damp weather. The design fits over spectacle frames for operators who must wear corrective eyeglasses. Width is adjustable.

A metal bar, across the top of the eye cups, holds them rigid so the goggle can be raised or lowered with one hand. Standard construction employs flame resistant nylon in the frames and the use of "AA" type lenses.

If you write maker identify as IEN-9265

GAGE . . Optical comparator to inspect small parts and dimensions

Source: EDMUND SCIENTIFIC CORP.
167 E. Gloucester Pike, Dept. 167, Barrington, N. J.

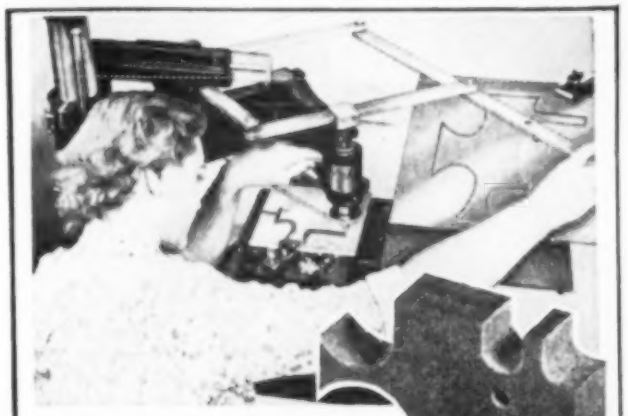


Imported

Layouts and machine work can be checked quickly and accurately, with this new Edscorp Pocket Comparator, on tools, dies, gages, threads, chamfers, small holes. Minute surface flaws can be seen clearly through the 6X lens. The reticle is calibrated to show angles, radii, circles, linear dimensions in decimals and millimeters. List price is $22.50.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9266



PANTOGRAPHIC PROFILING ON METALS AND PLASTICS

rapidly done by unskilled labor with

new hermes Engravograph

Write for literature
Bench Type Model H 23 (weight 200 lbs.)
Portable Model IM also available

NEW HERMES, INC. 13-19 University Place, N. Y. 3
Representatives in all principal cities. Canada—359 St. James St., Montreal

If you write maker identify as IEN-9267

Write for your copy of this new 32-page engineering manual . .

This new illustrated manual is full of information about Mueller Brass Co. brass, bronze and aluminum forgings . . . includes charts, graphs, facts and figures that give complete data about design factors, tolerances and the chemical, mechanical and physical properties of the MBC forging alloys. Get your copy of this valuable handbook today . . . it's yours for the asking.

MUELLER BRASS CO., PORT HURON 26, MICHIGAN
112-A

If you write maker identify as IEN-9268

You get ALL these features when you buy PET DRILLS!

If you want the best, take an extra look at the PET Superduty Drill above! Here's a continuous-duty drill—built to *work* right and *handle* right.

And, the price is right, too! All features shown are *standard* in PET Superduty Drills—at a *standard drill price!* Complete line of 54 ¼", ⅜" and ½" models gives you wide selection—in pistol or saw-type grip. Use coupon below to get complete facts!

PORTABLE ELECTRIC TOOLS, INC., 320 W. 83rd St., Dept. IE-83, Chicago
In Canada: Portable Electric Tools, Ltd., 452 Birchmount Rd., Toronto

MAIL COUPON FOR FREE BULLETIN

Please send me free PET Superduty Catalog and name of nearest distributor.

Name _____ Title _____
Company _____
Address _____
City _____ State _____

If you write maker identify as IEN - 9269

AGASTAT

Compact . . . Dust-Proof
TIME DELAY RELAYS
solenoid actuated—pneumatically timed

Introduces time delays into a-c or d-c circuits. Easily adjusted to provide delays ranging from 0.1 second to five or more minutes.

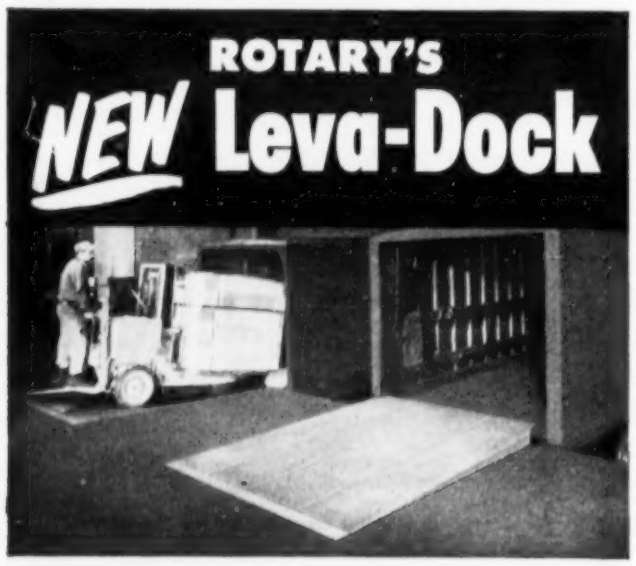
The AGASTAT is small, light, and operates in any position. Dust-proof timing chamber assures long operating life with a minimum of maintenance.

Write for Bulletin. Dept. A1-82,

AGA

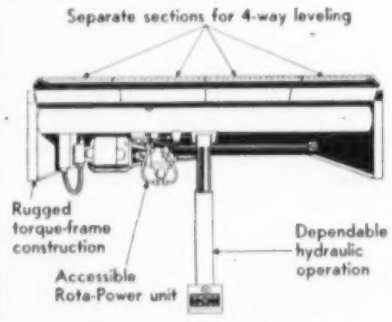
Division of Elastic Stop Nut Corporation of America
1027 Newark Avenue, Elizabeth 3, New Jersey

If you write maker identify as IEN - 9270



Adjustable hydraulic ramp for loading docks

- Low cost
- Simple installation
- Easy maintenance
- Assured Safety
- 4-way leveling



• Faster, Safer Loading—Hundreds of material handling men were interviewed, thousands of loading docks checked before the new LEVA-DOCK was designed and engineered. It's Rotary's practical, economical answer to the loading dock problem.

This new automatic ramp compensates 4 ways for varying truck bed heights, out-of-level trucks, and truck spring deflection. Power trucks move quickly, safely in and out of trucks or trailers. A new automatic safety device prevents accidents and costly delays.

The Leva-Dock is a rugged, self-contained unit with oil reservoir mounted in torque-tube frame. All piping and wiring done at the factory except power leads and control wires. Installation costs are cut to the bone.

Mail the coupon and we'll show you how to make big savings at your loading dock.

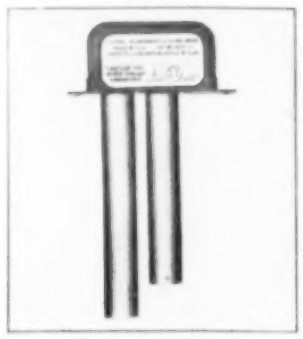
Rotary® Leva-Dock

MAIL FOR COMPLETE DATA
Rotary Lift Co.
1073 Kentucky, Memphis 2, Tenn.
Send information on the LEVA-DOCK to:
Name _____
Address _____

If you write maker identify as IEN - 9272

THERMOSTAT . . Sealed assembly to control air flow or liquid level

Source: FENWAL INCORPORATED
216-20 Pleasant St., Ashland, Mass.



Actuates circuit

Detect-A-Flo is a new hermetically sealed assembly employing contact action similar to the company's basic Thermoswitch. Mechanical expansion due to change in temperature is transmitted through a strut and electrical-contact assembly to open and close a control circuit. This circuit rates 5 amp. at 110-volt ac., 2 amp. at 28-volt dc.

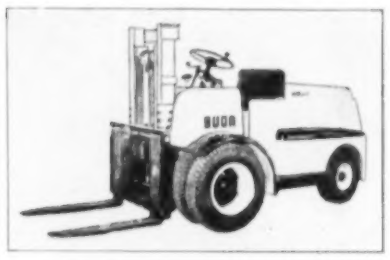
Application is in a duct carrying heated air, or in a tank for liquids. The unit connects to the control circuit and also to a source for electric current to operate a small internal heater in one of the cylindrical legs. This leg expands if flow rate or liquid level drops and fails to continually conduct heat away. The resulting expansion is transmitted through lever action to the contact assembly in the other leg.

The double leg design compensates inherently for changes in ambient temperature within the operating range of minus 65 to plus 175 deg. F. Operating sensitivity at room temperature is within 0.25 fps. based on air flow. Overall dimensions are about 2 by 2¼ by 5 inches. Weight is about 8 ounces. Current drawn by the heating element is negligible under normal operating conditions.

If you write maker identify as IEN - 9273

TRUCK . . Engine driven fork lift rates 3 ton at 24 in. load center

Source: BUDA COMPANY
15401 S. Commercial St., Harvey, Ill.



Optional torque converter

Model FTP60-24, with gasoline engine drive, and Model FTPD60-24, with a diesel engine, are two new trucks, rating 3 ton on 24-in. load center. Five standard lift heights are from 72 to 120 inches. Both trucks are mounted on pneumatic tired wheels. Overall length, without the forks, is about 105 in. for the dual drive and 106 in. for the single drive assembly. The two units will turn in 91 and 86¼-in. intersecting aisles.

Construction includes a single lever automotive type gear shift, center point steering, instrument panel in front of the operator, a 12-in. industrial type quick change clutch, hydraulic brakes, roller equipped fork mechanism, self-aligning lift cylinder.

If you write maker identify as IEN - 9274

WELDING . . DC arc machine in three ratings from 200 to 400 amp.

Source: METAL & THERMIT CORP.
100 E. 42nd St., 17th Floor, New York 17, N. Y.

Rectifier Type MT

Power input at 220 or 440-volt three-phase ac. is passed through a rectifier in this new dc. arc machine for rated output of 200 to 400 amp. at 40 volts. The machine is a companion unit to the ac. arc welder, previously described IEN-6488-52. A motor driven fan in the base of the assembly drives air upward around the coils for continued cool operation.

A crank on the housing adjusts coil position to change the output range. This is 35 to 350 amp. on the smallest of the three units in the line and 60 to 540 amp. on the largest. All three machines are assembled in the same size of housing. It measures 22 by 26½ by about 49 inches. Weights are 450 to 625 pounds.

If you write maker identify as IEN - 9275

CORROSION PROOFING . . Paint for high temperature metal surfaces

Source: RUBBER & PLASTICS COMPOUND CO.
30 Rockefeller Plaza, Room 1519, New York 20, N. Y.

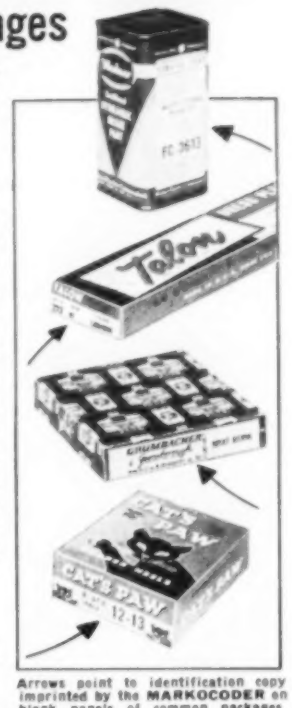
Dries to hard tough finish

Nerva-Kote TSI is a new silicone resin base paint containing aluminum or graphite. It is recommended for use on smoke stacks, boilers, hot processing equipment, steam lines, exhaust pipes. It is suited for temperature to 1,500 deg. F. Coverage is about 500 sq. ft. per gallon. Packaging is in 1, 5 and 55-gal. containers.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9276

How much can your company save ...by printing packages as you pack them?



If you make more than one product — or your product comes in different colors, sizes, flavors, etc. — the Gottscho MARKOCODER may cut your packaging costs in six different ways. The MARKOCODER is a fully automatic packaging-line imprinting machine that enables you to use a *partially*-printed common package for dozens of different products . . . eliminate the need of stocking large quantities of preprinted packages for each product in the line. With the MARKOCODER you print names, numbers, other identification data on one or more blank panels of cartons, boxes, cans, canisters, jars, etc. . . . *automatically* . . . as part of the packaging operation. The net result: *lower* package inventories . . . *lower* labor costs . . . *lower* unit package costs . . . *less* down-time on the line . . . *less* loss from obsolescence . . . *simpler* inventory control.

Write for MARKOCODER literature today

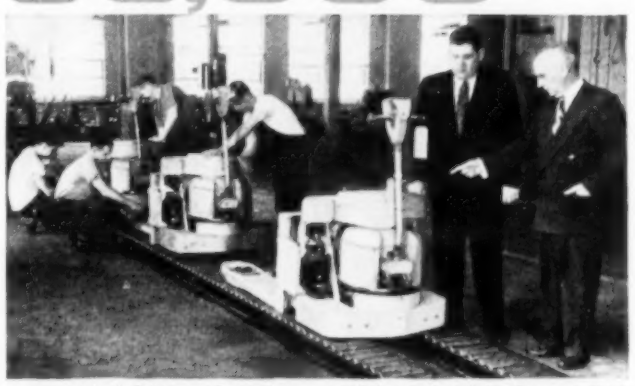
Arrows point to identification copy imprinted by the **MARKOCODER** on blank panels of common packages.

Gottscho **ADOLPH GOTTSCHO, INC.** **Hillside 5, N. J.** 50TH YEAR

Code-Dating Attachments • Package Imprinting Machines • Continuous Strip Printers

If you write maker identify as IEN - 9277

30,000TH AUTOMATIC TRANSPORTER COMES OFF LINE



John A. Baldinger, General Manager of Automatic and H. J. Framhein, Chief Engineer in charge of Transporters, see 30,000th Transporter come off line.

American Industry uses more Automatic TRANSPORTERS than any other operator-led electric truck. And, no wonder, for . . . in addition to trouble-free, superior performance and lower maintenance costs . . . to our knowledge . . . no Automatic TRANSPORTER has ever worn out!

For full details write: **Automatic®**

109 W. 87th St., Dept. M-3, Chicago 20, Ill.

World's Largest Exclusive Builders of ELECTRIC-DRIVEN INDUSTRIAL TRUCKS

If you write maker identify as IEN - 9278

Get these facts!

ON QUICK, EASY PRODUCTION OF NYLON MAINTENANCE PARTS FROM POLYPENCO® NYLON ROD . . . STRIP . . . TUBING

These bulletins give full information on POLYPENCO nylon standard shapes. Cite examples of how to get *all* the advantages of nylon for maintenance parts by fabricating from standard shapes.

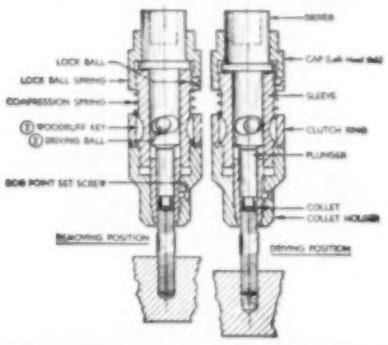
- Standard shapes (rod, strip, tubing)
- Formulation and characteristics
- Available sizes and length
- Recommended machining practice

CLIP AND MAIL COUPON NOW!

The Polymer Corporation of Penna., Reading, Penna.
Please send full technical and fabricating data ☐
rod, strip and tubing prices ☐
NAME ..... TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....
(Please print)

If you write maker identify as IEN - 9279

TITAN AR SERIES
Stud Driver and Remover



Engineered for the Aircraft Industry

Mutilation, scraping of stud threads — and distortion of cotter key holes — are eliminated by the new TITAN high speed, collet type, stud driver!

Unique in design, practical in use, the stud is driven by PITCH DIAMETER PRESSURE instead of pressure on top of the stud. Saves studs, saves time, speeds your work!

Write for Literature and Prices, TODAY!

TITAN TOOL CO.
Production Tools
46 Main Street • Fairview (Erie County), Pa.

If you write maker identify as IEN - 9280

Simply snap the KORNER KING right angle attachment on your present heavy duty drill (¼" or larger). LOW side gives you 80% more power at half rpm . . . HIGH side doubles your drill's rpm. Drill holes up to 2-9/16 inch in diameter in the most inaccessible spots — between joists and studs, in tight corners, etc. All with 100% safety because an exclusive RCS Torque Release eliminates dangerous torque reaction if drill jams . . . drive shaft continues turning if load or obstruction ever locks driven shaft or bit.

RCS SUPER SPEED BITS range in size from ⅝" to 2-9/16" diameters. Their new, simple design requires less torque, needs less thrust. Fast acting, cool running and long lasting, RCS SUPER SPEED BITS assure economical operation — as well as low initial cost. They're easy to sharpen, inexpensive to replace.

Extra extensions are available for these new RCS SUPER SPEED BITS which permit drilling holes, in perfect alignment, to just about any length.

If you use a drill, learn more about how RCS KORNER KING and RCS SUPER SPEED BITS can increase its efficiency and versatility.

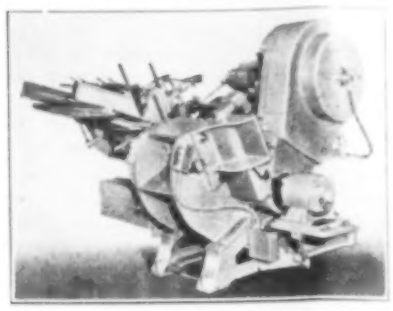
WRITE DEPT. IE-8 TODAY FOR COMPLETE DETAILS

R.C.S. TOOL SALES CORPORATION
JOLIET, ILLINOIS, U.S.A.

If you write maker identify as IEN - 9282

PRESS . . Inclined bed machine with strip feed for high production

Source: BALDWIN-LIMA-HAMILTON CORP.
Paschall Post Office, Philadelphia 42, Pa.



For continuous duty

Illustrated is recently improved design of the Hamilton No. 401 strip feed press to employ multiple dies in high speed production of products such as can ends, screw caps, and similar light stampings. The press takes a supply of material sufficient to last for about an hour before reloading is required. Pressure capacity is 25 ton.

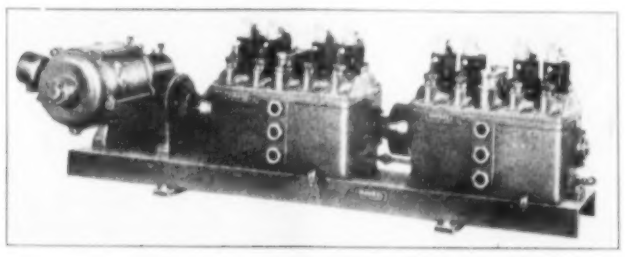
Construction includes a Fawick Air-Flex clutch and brake on the crank shaft. The brake is disengaged instantly by air pressure as the clutch engages. It is spring actuated to engage at the instant of clutch release. The press will stop if air fails.

Vacuum equipment handles the work from the stock pile to the dies. The press can be supplied with its own built-in vacuum pump or can be connected to a shop line. Control requires that both operator's hands be out of the danger zone.

If you write maker identify as IEN - 9283

LUBRICATING . . Force feed units for oil delivery to 30,000 pounds

Source: MANZEL DIVISION
313-17 Babcock St., Buffalo 10, N. Y.



Specifications upon request

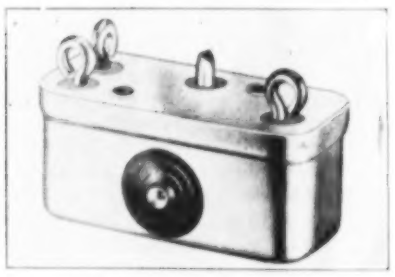
Model HP 20 and Model HP 30 are new high pressure force feed lubricators, each consisting of four integral sight feed and pump assemblies mounted on a cast iron reservoir. Two are shown together with a geared head motor drive in the illustration. Pump rate is controlled by an adjustment. Steam or electric heaters can be added.

Plunger diameters are ¼ and 5/16 in., the former to deliver four drops of SAE-40 oil per stroke against 30,000 lb. and the latter to deliver 6½ drops against 20,000 pounds.

If you write maker identify as IEN - 9284

SWITCH . . Hermetically sealed, sensitive, 10 amp. on 110 volt ac.

Source: HAYDON SWITCH CO.
230-34 N. Elm St., Waterbury 4, Conn.



Small, light, rugged

Rapid traverse for the beryllium mounted silver contacts and capacity for cycling to 750 operations per min. characterize this new precision switch. It will maintain contact without chatter in accelerations to 10G and through 700 cps. when pretraveled within 0.001 in. of its operating position. It is available in single-pole double-throw, single-pole double-throw, double make, two-circuit double-pole single-throw designs. Various types of external operator can be specified. Overall dimensions are about 1⅜ by ⅝ by ⅞ inch. Weight is 0.04 pounds. Each assembly is evacuated, checked for leaks and then filled with a dry inert gas and sealed. The enclosure will withstand 100-lb. pressure differential from inside to outside.

If you write maker identify as IEN - 9285

PLASTIC . . Phenolic material, mineral filled to make molded products

Source: DUREZ PLASTICS & CHEMICALS INC.
6 Walck Road, North Tonawanda, N. Y.

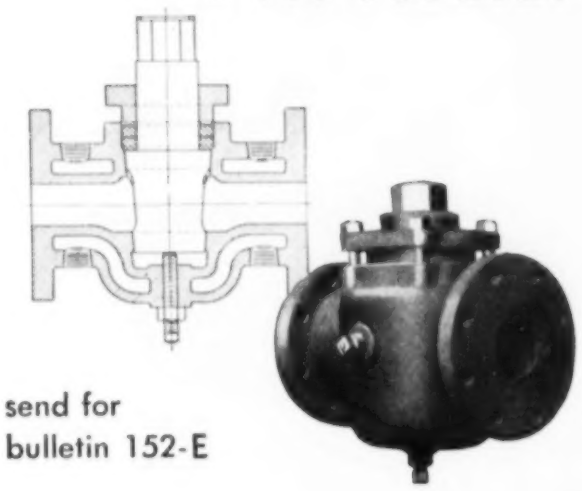
Technical data upon request

Work pieces, subject to exposure to high humidity for long periods, can be made from the company's new Durez 16274 Natural molding compound. Dissipation factor and water absorption are both low. Electrical properties are maintained after long periods of immersion in water. The material is characterized by long flow, fast cure. It is available in two forms, for compression molding and for plunger or transfer molding. It meets Mil-P-14 specifications, Type MFE.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9286

Now—
JACKETED FITTINGS
in *Ni-Resist*

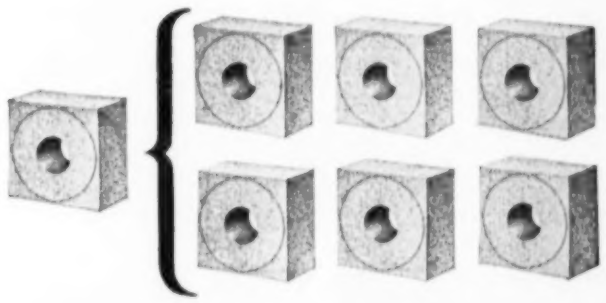


send for bulletin 152-E

Parks-Cramer Company
FITCHBURG, MASSACHUSETTS

If you write maker identify as IEN - 9287

B&W KAOCAST
Last 3 to 6 times longer



Used for burner blocks, B&W Kaocast stayed on the job 3 to 6 times as long as previous refractory...and this 3000F refractory castable is still going strong.

Kaocast is versatile, too...eliminates need for inventory of special shapes. It can be molded quickly by you, when you need it, directly in place or applied by cement gun. Put B&W Kaocast to work in your plant. Get all the facts from your B&W Refractories Engineer.

THE BABCOCK & WILCOX CO.
Refractories Division
GENERAL OFFICES: 161 EAST 42nd ST., NEW YORK 17, N. Y
WORKS: AUGUSTA, GA.

If you write maker identify as IEN - 9288

New
DRY TAMP
PERMAMix Floor Patch

Don't stop traffic to repair floors—use Permamix, the new all-temperature DRY TAMP floor patch.

DRY TAMP MEANS SPEED • No sticky mass to dig out of the drum or to handle • Permamix dry pours • sets instantly • feather edges perfectly • no production delays • non-skid surface.

ALL TEMPERATURE • Won't freeze • can be stored or used in *any* temperature • will store indefinitely • a stock room item • will not "set" in drum whether open or covered. Mistakes just can't happen. Tamp in place and traffic rolls.

CUTS MAINTENANCE COSTS on concrete, brick, tile or asphalt floors • no special equipment or skill needed • a one man job • comes in durable 50 lb. net wt. fibre drums • solve your floor patching problems for good.

Write for Details Now!
PERMAMIX CORPORATION
230 N. LaSalle Street • Chicago 1, Illinois

If you write maker identify as IEN - 9289

A-1035

EASTON

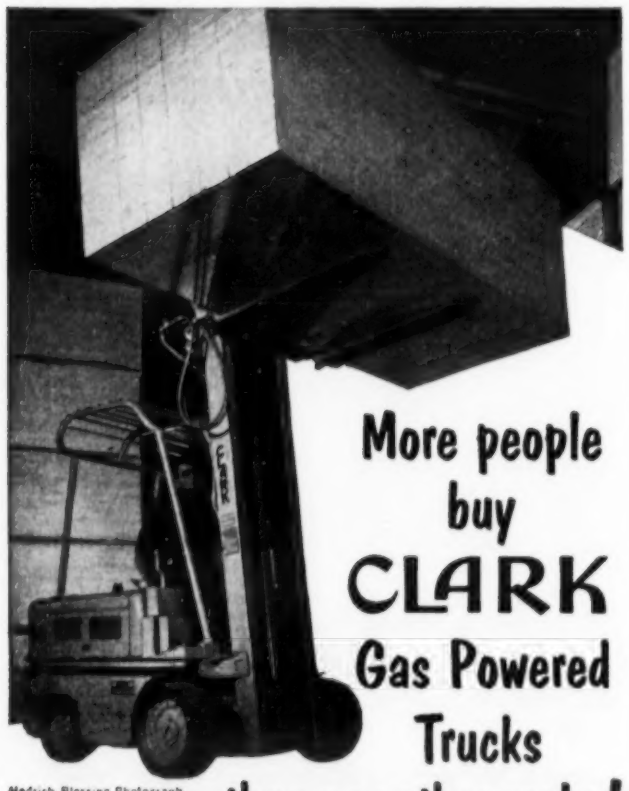
Furnace Cars

EASTON experience covers small and large capacity furnace cars for every requirement, including electric self-propelled cars for automatic continuous heat treating systems.

EASTON CAR & CONSTRUCTION CO.•EASTON, PA.

NEW YORK • PHILADELPHIA • PITTSBURGH

If you write maker identify as IEN - 9290



More people buy CLARK Gas Powered Trucks than any other make!

Hedrich-Blessing Photograph, courtesy of the EDWARD HINES LUMBER CO.

THERE ARE A LOT OF GOOD TRUCKS on the market, and a lot of good arguments for each. But this fact remains: *more people buy CLARK gas powered trucks than any other make.* Since we produce *all* power types . . . gas, electric, diesel and L.P. gas . . . we feel we're in a good position to explain why:

CLARK Horsepower Is Capacity-Rated To Your Requirements—Why pay for excess horsepower that you'll never use? CLARK gives you five engines, rated according to truck capacity. You get plenty of power for the job, without a lot of gas-consuming excess. When you buy a CLARK in the size that's right for you, you get the proper horsepower, too.

CLARK Flexibility Meets Any Work Condition — A wide range of speeds and a constant source of power enables your gas powered CLARK to handle any work condition. Flexibility means 'round-the-clock performance of normal operations, with a built-in reserve of power for peak loads and emergencies. And for long hauls, you can't beat the speed and economy of the gas powered CLARK. . . . . .

No matter what your handling requirements are—there's a CLARK machine to do the job. Electric or gas powered fork trucks, POWRWORKER hand trucks, industrial towing tractors—they all give you quality-value for your money. That's why industry buys more CLARKS than any other make of truck. When you're in the market for materials-handling equipment, talk to your local CLARK dealer first. Most people do!

CLARK ELECTRIC, GAS, DIESEL, L.P. GAS FORK TRUCKS

AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 49, MICHIGAN

Please send: ☐ Condensed Catalog ☐ Have Representative Call ☐ Driver Training Movie

Name_____

Firm Name_____

Street_____

City_____ Zone____ State_____

DISTRIBUTED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

1903 CLARK EQUIPMENT

If you write maker identify as IEN - 9292

HAMMER . . Portable electric tool for construction and maintenance uses

Source: TEMPO PRODUCTS CO.
2073-77 E. 65th St., Cleveland 3, Ohio

With a carrying case

Neoprene blocks are now employed in the impact mechanism of this recently improved Super Slugger electric hammer. Impact is fast and positive. The previous ⅝-in. piston travel has been increased to 1⅛ in. at full speed. At the same time, the motor and operator experience no shock or vibration.

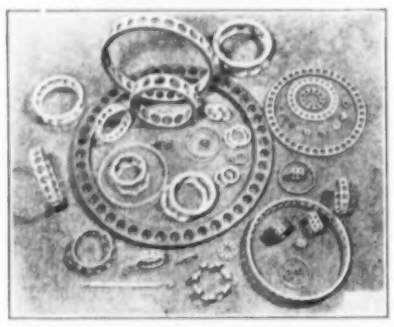
A new slide shoe and oil reservoir, together with six new holding chucks and a number of new tools, have been added to the original unit previously described IEN-6554-50.

The tool weighs 7½ lb. and can be operated in one hand by a worker standing on a ladder or scaffold. It can be employed to drill, chip or channel concrete and masonry, to clean mortar joints, cut sheet metal, scale rust, peen and clean welded joints, strip old plastic or linoleum flooring.

If you write maker identify as IEN - 9293

BEARINGS . . Ball retainers precision made of laminated plastics

Source: SYNTHANE CORPORATION
50 River Road, Oaks, Pa.



Typical designs

Ball retainers are now available to order in the company's tube or sheet form of laminated plastic. Sizes range from 0.143 to 33.000 in. outside diameter. The retainers are available for radial and thrust ball bearings. They also can be supplied as cages for roller bearings.

The construction is characterized by light weight, inherent self-lubricating ability, precision dimensions and unchanging characteristics in service. Three types of ball pockets include snap-in to hold the balls in place against dropping out on either side, cherry-reamed to provide a shoulder that prevents dropping through on one side, and straight through.

If you write maker identify as IEN - 9294

COUNTING . . Electric unit mounts two sets of counting wheels

Source: ROCKWELL MFG. CO.
624 N. Lexington Ave., Pittsburgh 21, Pa.

Rings a bell

Reset wheels, reading to 999, and totalizing wheels, reading to 99,999, are assembled in the rectangular housing of this new Ohmer counter. The upper wheels can be returned to zero by turning a thumb knob. The lower wheels continue to accumulate the count.

Originally designed to count fares, the instrument is suited for use at machines, on loading and unloading operations, in stock rooms and to count individuals in an assembly. Its solenoid can be actuated by a foot pedal, push button or photoelectric cell. Overall dimensions are 7 by 4½ by 9¼ inches. Weight is 13¼ pounds. The upper characters are ⅞ in. in height. The lower characters measure $\frac{9}{16}$ inch. Assembly is on a detachable back plate.

If you write maker identify as IEN - 9295

Cleaning machine tool sumps is a new use that one manufacturer has found for the portable vacuum cleaner he purchased from Breuer Electric Manufacturing Co., 5130 N. Ravenswood Ave., Chicago 40, Ill. The machine sucks out the liquid. It also removes dirt and chips. The accessory tools get into difficult corners to leave the sump dry and clean. The cleaning machine can be returned to floor service when its own sump is emptied.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9296

For All Sheldon Lathes less than 5 Years old...we have just published a new Parts List Manual, with:

. . . . every lathe part and sub-assembly illustrated, named, numbered and positioned on explanatory exploded drawings.

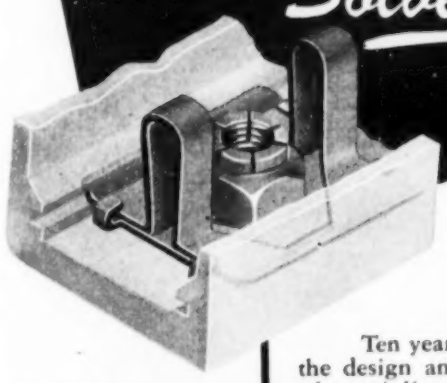
. . . . a section which illustrates and describes each of over 50 modern Attachments and Accessories to make your Sheldon Lathe even more versatile, productive and valuable to you.

To get this valuable Parts List (and Accessory) Manual just write (1) the serial number of your Sheldon Lathe and (2) your name, and (3) your firm name and address, on a post card, letterhead, billhead or slip of paper and mail it to "Parts Manual"

SHELDON MACHINE CO., INC.
4208 North Knox Ave., Chicago 41, Illinois

If you write maker identify as IEN - 9297

FASTENING PROBLEMS *Solved!*



This floating anchor nut solved a costly problem. Formerly, 3 separate parts made installation difficult and costly; removal was impossible. Our design, easily installed and easily removed, cut costs sharply.

Ten years experience in the design and development of *specialized* fasteners, enables us to help you. Consultation on your problem, especially in the *design* stage, will result in a cheaper, more efficient fastener for your product. *Write today.*

RESEARCH DIVISION

Nutt-Shel

811 AIRWAY
GLENDALE 1, CALIF.
Dept. IEN

Manufacturers of
SELF-LOCKING ANCHOR NUT
BOLT AND NUT RETAINERS

If you write maker identify as IEN - 9298

do you use POISONOUS carbon tetrachloride?

FORMULA 602 SAFER!

Continued use of carbon tet causes severe and incurable damage to liver, kidneys, heart, adrenal glands and nervous system by absorption through skin. Safety authorities caution against its use. FORMULA 602 is 24 times safer than carbon tet!

FORMULA 602 CLEANS MOTORS AND ALL ELECTRICAL EQUIPMENT

FORMULA 602 effectively cleans motors, radio parts, coils, condensers, generators and all electrical equipment. It dries rapidly without leaving a residue, corroding metals or damaging electrical insulation.

OTHER USES!

FORMULA 602 is used to remove residues of solder flux from contact points, dip tank degreasing of parts and tools, as a diluent and wherever carbon tet is now used for cleaning!

SEND FOR FULL INFORMATION!

RESULT OF TEST BY INDEPENDENT LABORATORY!

CARBON TET
10 rats inhaled 125 parts carbon tet per million parts air for 2 days, 30 minutes each day. All 10 rats died!

FORMULA 602
10 rats inhaled 125 parts Formula 602 per million parts air for 14 days, 30 minutes each day. All rats alive and healthy after test!

the PENETONE CO.

BOX IEN-853 TENAFLY, NEW JERSEY

If you write maker identify as **IEN - 9299**

Extruded or Roll Formed?

WERNER CAN PRODUCE IT and Heat Treat—too

in T4–T6 Tempers

IN	VOLUME
TO	PRECISION
WITH	SERVICE

Here are a few of the many products on which Werner shapes are used...

Trailers, Trucks & Buses, Railway Coaches • Aircraft • Furniture • Appliances • Electrical Fixtures • Storm Doors & Windows, Sliding Door Hardware • TV Antenna Tubing & Masts

One source for your extruded or roll formed requirements that will give you all the service you need. Over 100,000 feet of floor area . . 30 years of experience and millions of feet of custom extruded and roll formed sections make Werner a reliable, resourceful and skilled supplier. Also available—Anodizing, Cutting, Punching, Bending, Welding, Polishing, Assembly. **WRITE** for facilities folder *today*.

Werner

R. D. Werner Co., Inc., 295 Fifth Ave., New York 16, N. Y., Dept. 1-5
Factories: Greenville, Pa.; Oshawa, Ontario, Canada

If you write maker identify as **IEN - 9300**

You can depend on the rugged MARK-TIME "5400" Bell Time Switch

SPECIFICATIONS

UL approved for 20 ampere, 125 volt, 1 HP or 10 ampere, 250 volt operation, AC only. Timings available from 60 seconds to 5 hours. Normally supplied with center stud mounting. Other mountings available on request.

This Mark-Time switch is built to uphold the reputation of your product. Install it in your appliances, devices or machines, and give your customers a *double-purpose* time switch. "5400" turns OFF the circuit at the end of a pre-set time period . . . and gives a clear warning bell signal. Your customers will like that *double* service!

"5400" has a wide range of applications . . . is available with a wide variety of modern dials and knobs . . . can be supplied as an "ON" type of unit on special order.

Write today for full details and prices.

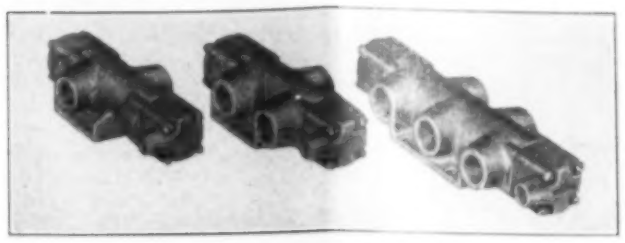
MARK-TIME
M. H. RHODES, INC.
HARTFORD, CONNECTICUT

Manufactured and sold in Canada by
SPERRY GYROSCOPE OTTAWA, Limited
3 Hamilton St., Ottawa, Ontario, Canada

If you write maker identify as **IEN - 9302**

VALVE . . Two, three, four way, controls air or liquid to 200 pounds

Source: VERSA PRODUCTS CO.
247-51 Scholes St., Brooklyn 6, N. Y.



Folder No. 13-1

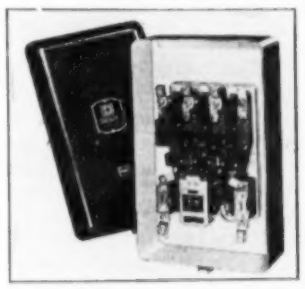
Two new sizes, with ⅝ and ½-in. pipe thread connections, have been added to the company's line of balanced-spool operating valves, previously described IEN-6696-53. Internal parts are interchangeable with the original ⅛ and ¼-in. sizes. The valve can be taken apart without disturbing the pipe connections. The balanced pressure spool design results in light actuating forces.

The valve can be supplied with a spring or lever return, with cam, pressure pilot or foot operation, also with spring return or to hold at a set position until return action is applied by the operator.

If you write maker identify as **IEN - 9303**

MOTOR CONTROL . . Contactor, to 50 hp. on 220 volt 3 phase ac.

Source: SQUARE D COMPANY
4039-43 N. Richards St., Milwaukee 12, Wis.



Bulletin 8536F

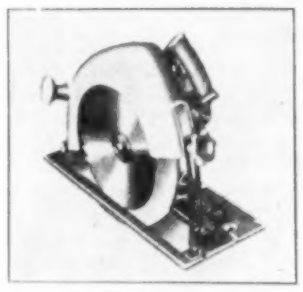
The armature in this new NEMA Size-4 contactor is guided at the top and bottom for vertical action by its operating magnet. It operates silver contacts in double break design. The new assembly measures 9¼ by 7¼ by 14¾ in., considerably smaller than the clapper type unit it replaces. Polyphase rating is to 50 hp. on 220-volt or 100 hp. on 440/550-volt polyphase current.

Parts are front mounted for accessibility in service and maintenance. The contacts can be inspected after removing the arc chamber covers. They also can be removed for replacement without disturbing the line or load wiring. A maximum of eight electrical interlocks can be added before or after shipment. These interlocks are mounted on their own insulating base and can be secured with two screws. Magnetic yokes in each arc chamber assist in breaking the arc.

If you write maker identify as **IEN - 9304**

WOODWORKING . . Portable saw, pneumatic drive, 12 in. circular blade

Source: INGERSOLL RAND CO.
746 Morris Ave., Phillipsburg, N. J.



Takes a big bite

Work capacity is to 4⅜ in. when set square and 2⅞ in. when set at 45 deg. for this new Type S-12 Air Saw. The vane type motor drives the blade at 2,400 rpm. on free operation. The motor mounts with the aluminum housing and saw guard so it can be tilted to an angle to 45 deg. on the base or raised and lowered to regulate the cut depth.

The tilting action reduces the depth of cut only ⅜ in. from the 4⅜ in. maximum when the blade is set square. Overall dimensions are 19½ by 12½ inches. Distance from the center of the blade to the front of the guide is about 8¼ inches. Connection is made to a shop source for compressed air through a ½-in. pipe threaded opening. A ¾-in. hose is recommended. The saw is supplied in a metal carrying case which also will carry extra blades.

If you write maker identify as **IEN - 9305**

You are looking at the picture of a young lady through a protecting sheet of translucent acetate butyrate. It not only protects the picture without hiding it from view but also provides a ground-glass type of outer surface on which notations can be made. The plastic sheet is attached along the upper edge of the photograph so it can be folded back for retouching and engraving operations. It costs about 14 cents per square foot in roll sizes containing 100 feet. It is available also in sheet sizes measuring 40 by 50 or 60 inches. Eastman Kodak Company, Rochester, N. Y., gave us the information.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9306**

NYLINED* BEARINGS

. . . with Smooth, Tough, Du Pont NYLON

Solve Many Bearing Problems

- Resiliency resists poundout
- Permit dry operation
- Minimize abrasion failures
- Silent operation
- Lower friction
- Superior corrosion resistance
- Damp mechanical vibration
- Eliminate friction oxidation
- Operate in liquids
- Close fits
- Non-contaminating
- Extremely compact
- Light weight
- Low cost
- Longer life
- Less maintenance
- Bearing surface instantly replaceable

*For further information and the name of your local representative, write

THOMSON INDUSTRIES, Inc.

Dept. 8
Manhasset, New York

Also Manufacturers of BALL BUSHINGS . . . the Ball Bearing for Linear Motions

If you write maker identify as **IEN - 9307**

TAPER-LOCK BUSHINGS WITH WELD-ON HUBS

NOTHING ELSE LIKE IT!

FOR your sprockets, gears, clutches, motors, impellors — for wheels of all kinds where service conditions are *really rugged*—there is nothing like TAPER-LOCK. This famous patented bushing—supplied for your use with matching TAPER-LOCK Weld-on Hub — gives you an easy-mounting, true-running unit that locks to the shaft with firmness equivalent to a shrunk-on fit. *WRITE* for special bulletin A-420A with specifications and entire range of shaft sizes (1/2" to 10").

DODGE MANUFACTURING CORPORATION, 600 Union St., Mishawaka, Ind.

DODGE
of Mishawaka, Ind.

If you write maker identify as **IEN - 9308**

Eliminate STACK DUST PROBLEMS

Buell's record of success over the past 18 years has pioneered every forward step in the scientific collection of Fly Ash. It evidences wide experience that can be utilized by you...applied to your problem with these results:

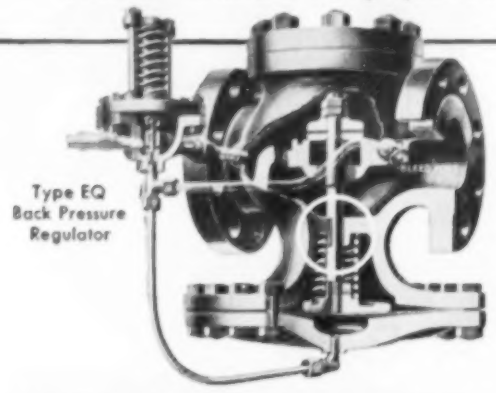
1 IMPROVED PRODUCT
2 HIGHER LEVEL OF EMPLOYEE MORALE
3 BETTER PLANT-COMMUNITY RELATIONS

For full information on Buell's ***3 basic systems*** of efficient dust collection—write for the new Buell 'Dust Collection' bulletin. Buell Engineering Co., Dept. 22-H, 70 Pine Street, New York 5, N. Y.

buell
Engineered Efficiency in
FLY ASH COLLECTION

If you write maker identify as IEN-9309

another SPENCE *design feature*



Type EQ Back Pressure Regulator

No Stuffing Boxes..

In Spence regulators all main valves and most pilots are built without stuffing boxes. This packless construction is made possible by the use of a large balanced metal diaphragm which eliminates the need for closely fitted parts. Result? More accurate regulation. • Valve stem wear is also reduced in the Spence packless design. Result? Low maintenance, years of trouble-free service • Write for Bulletin 500 giving full details of complete Spence line of automatic regulating valves.

SE-125

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

If you write maker identify as IEN-9310

Ice Cubes...

are quickly, easily removed from Plastic Trays which, instead of being formed, are produced by a new vacuum molding process. Heat for the molding equipment is supplied by Trent Patented

"FOLDED-and-FORMED" Heating Elements

This is but one of hundreds of different applications for these efficient, economical electric heating elements. Made in Standard and Custombuilt Racks, arranged to provide any required K. W., at temperatures to 1350°F.

What is YOUR heating problem? "Folded-and-Formed" may offer the right solution.

TRENT INC.
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA. 27, PA.

If you write maker identify as IEN-9311

KEYWAYS?

CUT 'EM EASY—by hand, arbor press
CUT 'EM QUICK — one minute per keyway
CUT 'EM CHEAP — as little as a penny apiece

(25 standard Kits; 23 standard sizes of broaches; 71 standard size bushings; and a wide variety of production type, guideless broaches)

with du MONT *Minute Man*
KEYWAY BROACH KITS

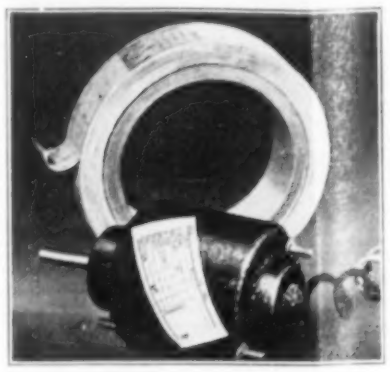
CUT AND MAIL THIS COUPON TO

The du MONT CORPORATION, Greenfield, Mass.
MAIL ME FREE CATALOG and PRICE LIST N
Name .....
Company .....
Address .....

If you write maker identify as IEN-9312

MARKING . . Printed labels on self-adhesive tape, for inspection

Source: LABELON TAPE CO.
448-52 Atlantic Ave., Rochester 9, N. Y.



Sample on request

Illustrated is a typical example in the company's new line of printed labels. They are supplied in continuous rolls on self-adhesive tape for inspection and identification. The white face of the label also can be marked by a pen or pencil. Labels are torn from the roll of tape and placed on work as it goes through various operations. Markings are noted when the work pieces reach inspection. The labels can be removed without leaving any mark when no longer needed.

Printing is to specification. The label is available in a range of widths and roll lengths. It can contain a user's message, a design, trade mark, symbol, printed in a choice of colors.

If you write maker identify as IEN-9313

TESTING . . Pneumatic equipment checks tube assemblies for leaks

Source: J. N. FAUVER CO.
45 W. Hancock Ave., Detroit 1, Mich.

Dunks the work

Pivoted fixture in this new immersion testing equipment rides upward when its counterweight is depressed so tube assemblies can be inserted at four positions and clamped in place. Air pressure is then applied by operating a valve at the rear of the housing and the fixture is tilted down until the assemblies are under water in the tank. Any bubbles that appear indicate leakage. Defective units can be noted and removed when the fixture is tilted up and the air has been shut off and released.

Pressure is applied at 80 to 100 lb. through a combination filter and regulating valve from a shop line. The design is typical of special equipment for test purposes that the company is prepared to build to specification.

If you write maker identify as IEN-9314

TRUCK . . Engine driven fork lift rates 2 ton, has 6 ft. turning radius

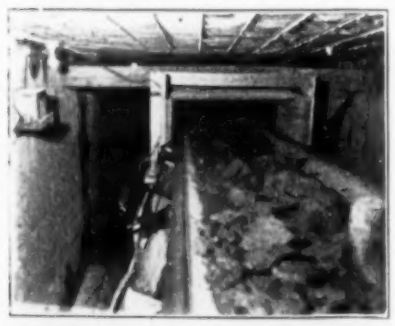
Source: TRUCK-MAN DIVISION
591 Liberty St., Jackson, Mich.

Model 40

Lift height can be specified in this new engine driven hydraulic fork lift truck. Number and style of the forks are also to user requirements. The truck is suited for use indoors or in plant yards. It is driven by a 40-hp. Ford industrial engine with governor control for top speed at 15 mph. Mounting is on pneumatic tires. The construction provides for mast tilt to the front and rear and hydraulic side shift for the forks. Hose lines are supported on guides.

If you write maker identify as IEN-9315

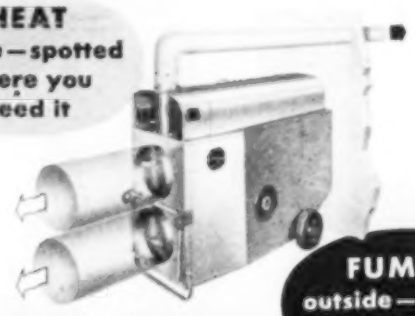
New metal detector has been added to the line, previously described IEN-793-52, to signal the presence of metals in dry granular and lump materials traveling on a belt conveyor. The new electronic unit is particularly for use in handling quarry products, coal, ahead of crushing equipment. The detector frames an opening through which the loaded belt passes. It is weatherproof so it can be used in the open. The metal actuated signal can be employed to shut the conveyor down. It is by Radio Corporation of America, Camden 2, N. J.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9316

HEAT inside—spotted where you need it



FUMES outside—where they belong

HERMAN NELSON
PORTABLE AIR HEATERS

Get all the FACTS about all Portable Heaters. Write to American Air Filter Company, Inc., Dept. 101, Moline, Illinois.

Why take chances with temporary heat you can't always trust? Put Herman Nelson Portable Air Heaters on the job and have complete safety assured!

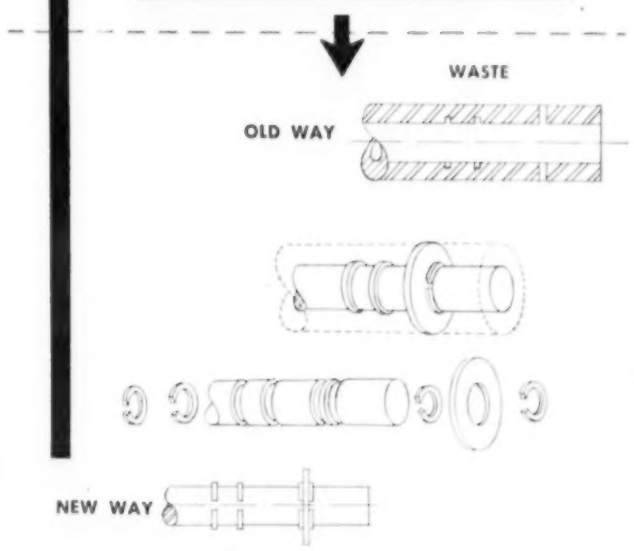
Herman Nelson heaters have vented, sealed flame heat and automatic safety controls. There's no danger of fire, no danger from carbon monoxide or other fumes, no danger of job-ruining smoke or soot. Combustion products are carried outside the working area—and clean, warm air is directed inside to any spot by flexible canvas ducts.

Be sure you get safety, dependability, performance—be sure you get Herman Nelson, the only complete line of completely safe Portable Air Heaters.

Herman Nelson Portable Air Heaters, another product of American Air Filter Company, Inc., Moline, Illinois.

If you write maker identify as IEN-9317

Examine the design of your products and machines...
No doubt you too can save time—save materials—and increase your profits by using
NATIONAL RETAINING RINGS



There are literally thousands of places where retaining rings will *save*, ranging from simple applications on tools, toys, small parts and gadgets to complicated heavy duty engines, large drill presses, etc., etc.

And in addition to this economy, they *improve* your products. It is wasteful to cut down shafts to make shoulders. Redesign to groove *smaller* shafts and housings and use these high-grade steel rings.

Let our engineers consult with you. Send today for folders.

Don't pass up this opportunity to increase profits.

THE NATIONAL LOCK WASHER CO.
NEWARK 5, NEW JERSEY • MILWAUKEE 2, WISCONSIN, U. S. A.

If you write maker identify as IEN-9319

"FULFLO" OIL BY-PASS RELIEF VALVES

EASIEST TO INSTALL . . . QUIETEST!

Choose from 5 pre-determined pressures and set . . . FULFLO VALVES get going and keep on going uniformly and quietly for as long as you want.

TROUBLE-FREE
NO MAINTENANCE
NON-CHATTERING

BRASS OR CAST IRON

For pressures from 5 to 500 lbs., sizes ¼" to 2".

FLANGE OR STANDARD

Write on letterhead for personal copy, FULFLO MECHANICAL DATA BOOK. State if for Valves, for Pumps or both.

THE FULFLO SPECIALTIES CO. Inc.
BLANCHESTER, OHIO

If you write maker identify as IEN-9320

HANDLING BULK MATERIALS?

"TAKE IT UP A FLO-TUBE"®

CANTON STOKERS

The spiral conveyor of steady, dependable service. Sturdy cast iron trough bolts together in 3 ft. sections, capped with steel plates for easy removal if ever necessary. Built to take the abuse of coal, yet with tolerances just right to handle materials from grain size to lump.

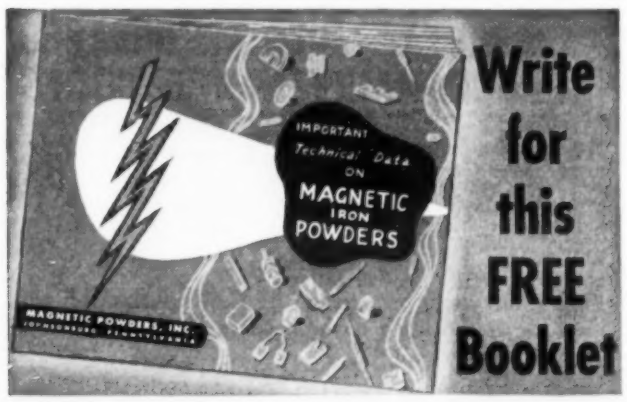
To fill 3 or more hoppers use gate-valves in Flo-Tube horizontally. Below, filling 2 hoppers with "Y" chute.

Hopper level maintained by 'off-on' automatic switches.

Exposed end for pick-up

CANTON STOKER CORP.
SPECIALISTS IN AUTOMATIC COAL FIRING, HANDLING AND CONTROL EQUIPMENT
107 ANDREW PLACE S. W. • CANTON, OHIO

If you write maker identify as IEN-9321



Write for this FREE Booklet

CONTAINING IMPORTANT INFORMATION ON

Laboratory Controlled • Quality
RAW MATERIALS
for ELECTRONIC and INDUSTRIAL APPLICATIONS

MAGNETIC POWDERS INC.
POST OFFICE BOX 247
JOHNSONBURG, PENNA.

If you write maker identify as IEN-9322

GAGE . . Ribbon type indicator to apply on a graphic process panel

Source: FOXBORO COMPANY
42 Neponset Ave., Foxboro, Mass.

For process variable

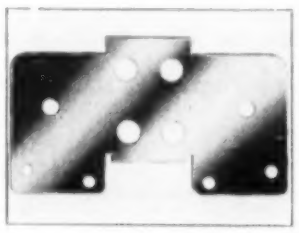
Position of a valve, between open and closed, or other variable such as liquid level, can be indicated by this new ribbon type receiver. It is known as Model 50 in the Consotrol indicator line and is designed for use as a component in a graphic process panel. The gage is available with single or dual scales and can be adjusted for direct or reverse response. Alarms, employing mercury switches, can be added for signaling duty.

Pneumatic actuation is provided by a transmitter located at the point of measurement in a process. This force is applied to a bellows to rotate two drums by means of a lever and stainless steel tape. The drums mount a colored graduated nylon tape that moves back of a glass pane carrying scale lines. The pane face measures ¾ by 4¼ inches. The mechanism can be removed from the housing without disturbing the scale, housing or panel. Zero, range and damping adjustments are provided.

If you write maker identify as IEN-9323

STAMPINGS . . Flat, in small runs, with holes punched to specification

Source: FEDERAL TOOL & MFG. CO.
3640 Alabama Ave., Minneapolis 16, Minn.



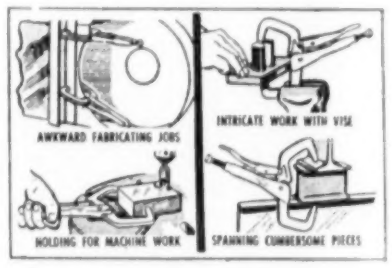
Sample piece

Dimensions range from 4 to 6½ in. with thickness from 0.015 to 0.093 in, based on mild steel, and hole size from 1/16 to ½ in. in new facilities the company has installed for short-run flat stampings. Parts can be produced quickly with minimized tool cost in any stampable material, ferrous, non-ferrous, non-metallic.

If you write maker identify as IEN-9324

CLAMP . . Plier type toggle operated for work positioning and holding

Source: PETERSEN MFG. CO.
453 Petersen St., DeWitt, Nebr.



"Uses unlimited"

We have new information on the Vise-Grip C-Clamp and a new illustration showing typical applications of the clamp, previously described IEN-6492-53. We present both in this new description.

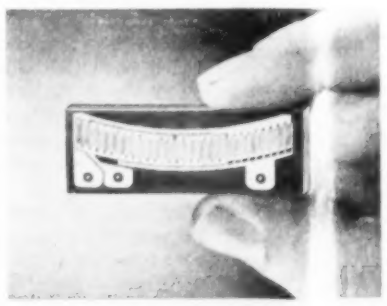
The jaws can be set to clamp at any opening to 3¾ inches. Throat clearance in closed position, is 3 inches. Inside throat depth, or reach, is 3½ inches. Overall length is 11 inches. The end screw is for jaw adjustment.

Work can be positioned with one hand and the clamp locked by squeeze action with the other after the screw has been adjusted. List price, as we reported previously, is $2.95.

If you write maker identify as IEN-9325

ELECTRIC CIRCUITS . . Conductor, bonded to base in specified outline

Source: VACUMET INCORPORATED
1265-69 N. Clybourn Ave., Chicago 10, Ill.



Commutator segment

Circuit wiring, commutators, switches, inductors and other circuit components can be produced in the company's new "in-bedded" design. Conductor line widths, minimum at 0.001 in., can be produced. A width of 0.005 in. will handle a continuous load of 250 milliamperes. Width, as specified, can be held within 0.00[illegible] in., plus or minus.

The solid metal conductor, [illegible] specified circuit pattern, is embedded flush with the surfa[illegible] of a plastic, ceramic or glass base in a molding process the [illegible]pany has developed. Contact elements ride smoothly over [illegible]e surface. Contact bridging can be prevented by the use of [illegible]unded contacts.

All Makers of These And A[illegible] Other Products Are Listed In THOMAS' REGISTER . . Desc[illegible]ions . . Ratings . . See Page 50

If you write maker identify as IEN-9326

DENISON Hydraulic PUMPS and CONTROLS
For Every Need—to 5000 psi

Denison offers today's most rapidly growing line of oil-hydraulic pumps, motors, and control valves for every need—for operation at all pressures to 5000 psi. Backed by 27 years of specialized experience in oil-hydraulics, Denison equipment has proved its extra efficiency and durability under long, hard, continuous service of all kinds. Write for Denison catalogs on:

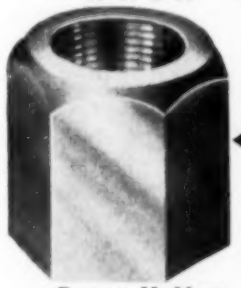
Axial-Piston Fluid Motors . . . Vane-type Fluid Motors . . . Axial Piston Pumps . . . Vane-Type Pumps . . . Complete Pumping Units . . . Directional Controls . . . Pressure Controls . . . Sequence Controls . . . Relief Valves . . . Pressure Reducing Valves . . . Multi-Range Flow Controls . . . Check Valves . . . Surge Damping Controls . . . and other types of hydraulic equipment.

The DENISON Engineering Company
1150 DUBLIN ROAD, COLUMBUS 16, OHIO

DENISON HydrOILics
"The Finest Money Can Buy!"

If you write maker identify as IEN-9327

Twice the Grip...
WHEN GRIP COUNTS



BIDDLE HI-NUTS

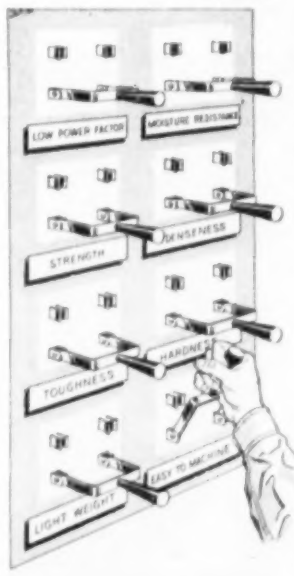
BIDDLE HI-NUTS are made for greater gripping power. Where vibration is high, where motion takes over, the additional gripping power of BIDDLE HI-NUTS takes control. Made from B 1113 steel, machined from the bar, BIDDLE HI-NUTS are threaded to SAE Specifications. Sizes from ½ inch to 1¼ inches, heights from 15/16th to 1¾ inches, with diameters across the flats from ¾ to 1¾ inches. Put extra grip into the jobs where extra grip counts . . . with BIDDLE HI-NUTS.

Write today for more complete information and specifications.

NATIONAL SCREW MACHINE PRODUCTS ASSOCIATION

BIDDLE SCREW PRODUCTS COMPANY
SHERIDAN, INDIANA

If you write maker identify as IEN-9328



Choose the COMBINATION of properties you need

Light weight, strength, chemical and moisture resistance, hardness, toughness, density, high dielectric strength—Synthane laminated plastics combine them all in one easy-to-machine material. If your product—or a component—requires a specific *combination* of properties, it will pay you to investigate Synthane. The coupon below brings you full details.

SYNTHANE

Manufacturers of laminated plastics
SHEETS
RODS • TUBES
MOLDED-LAMINATED
MOLDED-MACERATED
FABRICATED PARTS

SYNTHANE CORPORATION
South River Road, Oaks, Pa.

Gentlemen:
Please send me the new Synthane Catalog without charge or obligation on my part.

Name _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 9329

A "New Slant" ON SOCKET SCREWS

it's a non-skid grip!

SOCKET SCREWS EXCLUSIVELY!

and available only in

Blue Devil

DIAGONAL KNURL SOCKET CAP SCREWS

FORGET FINGER FUMBLING

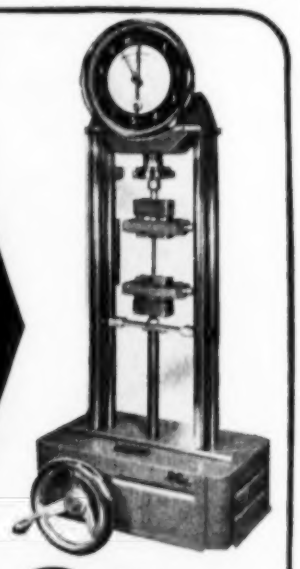
"Diagonal Knurl" heads are a real time- and work-saver especially designed for hand assembly operations. They're exclusive with Blue Devil . . . furnished only on cap screws up to and including ½" diameter.

SAFETY SOCKET SCREW COMPANY
6308 AVONDALE AVE., CHICAGO 31, ILLINOIS

If you write maker identify as IEN - 9330

Precision

built throughout for ease and speed in operation. Fully portable. Will make TENSILE, COMPRESSION, TRANSVERSE and SHEAR tests. Motorized or hand operated. Calibrated with Morehouse Proving Ring for accuracy. Maximum hand, self-aligning jaws, ball bearing throughout. Tests any type material, rounds, flats, special shapes.



Immediate delivery! Capacities from 0-250 lbs. up to 0-10,000 lbs. America's most popular low priced tester! Hundreds in use by leading plants.

Sales Reps: Some Territories open — write

Dillon TENSILE TESTER

WRITE FOR ILLUSTRATED BROCHURE AND FREE TENSILE STRENGTH COMPUTER

W. C. DILLON & CO., Inc. 14620K Keswick St. Van Nuys, Calif. (sub. of Los Angeles)

If you write maker identify as IEN - 9331

IT MAKES THE IMPOSSIBLE JOBS ...easy!

THE S-White INDUSTRIAL "AIRBRASIVE" UNIT

The "Airbrasive" process utilizes a controlled stream of high-velocity gas-propelled abrasive particles to perform a wide variety of operations with an amazing speed and precision. It can be used to cut, score, drill, etch or shape extremely hard, brittle materials and to remove deposited surface coatings and films from any base.

It has already been demonstrated that the "Airbrasive" Unit will do jobs that are impossible to accomplish by previously known methods. What's your problem? We'd be glad to arrange a test. Write or phone us today.

For complete information write for Bulletin 5307

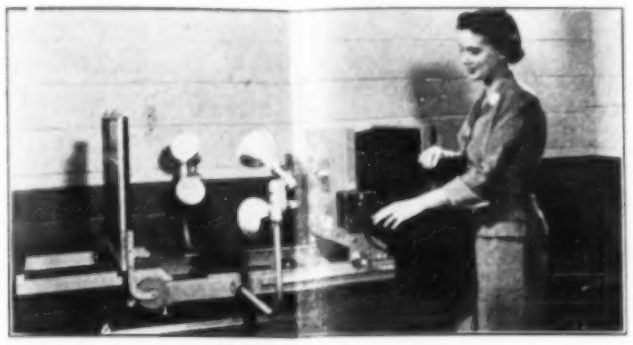
THE S-White INDUSTRIAL DIVISION
DENTAL MFG. CO. Dept. NA, 10 East 40th St. NEW YORK 16, N. Y.

WESTERN DISTRICT OFFICE: Times Building, Long Beach, California

If you write maker identify as IEN - 9332

PRINTING . . Electrostatic equipment makes off-set duplicator masters

Source: HALOID COMPANY
47 Haloid St., Rochester 3, N. Y.



Xerox Bulletin *explains the process*

Engineering drawings, or other copy measuring to 17 by 22 in., is photographed on an 8½ by 13-in. Xerox plate with this new camera and its associated equipment. Basic operation is the same as in the original equipment, previously described IEN-6001-51.

The Xerox plate is employed to make offset paper masters from which multiple copies can be produced on an offset duplicator. Copies can be made also in a diazo machine using a translucent print made by xerography, as the original copy. The new camera permits reductions to 50 per cent or enlargements to 150 per cent of original size to the 8½ by 13-in. plate.

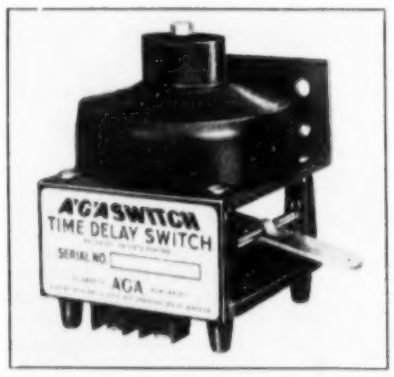
Four 300-watt lamps provide illumination for the exposure interval. They are connected through the electric shutter control on the camera to operate only when the shutter is open. The equipment fits on a 2 by 5-ft. table. An electric timer provides for an exposure interval to 60 seconds.

Xerography is a dry direct positive electrostatic reproduction process that operates without film, darkroom or sensitized materials. Reproduction results upon cascading a black resinous powder over the electrostatic surface of the treated plate. Then it is processed in the copier where the image is transferred to the paper and made permanent by fusing for a few seconds. The master and multiple copies can be made in about 3 minutes.

If you write maker identify as IEN - 9333

RELAY . . Pneumatic time delay, lever actuated, 0.1 to 300 seconds

Source: ELASTIC STOP NUT CORP.
1022 Newark Ave., Elizabeth, N. J.



Lever starts action

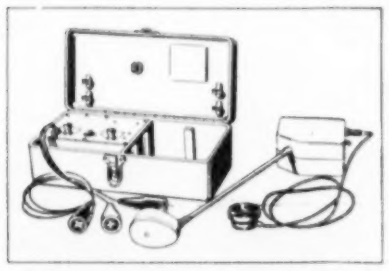
Mechanical lever replaces the actuating solenoid in this new Agaswitch assembly of the company's original Type-2 Agastat. Pressure on the lever trips the action and a time delay interval of 0.1 to 300 sec. starts upon lever release. The unit is available in single-pole double-break and in double-pole single-break designs rating 15 amp. on 110-volt ac.

The delay interval is set by restricting air flow through an adjustable orifice in the timing head. The orifice and the air are protected against entrance of dust into the head. The assembly measures about 2 by 2 by 3 inches.

If you write maker identify as IEN - 9334

TESTING . . Cable fault locator to check insulated electric cable

Source: JOY MFG. CO.
Henry W. Oliver Bldg., Dept. CFF-34, Pittsburgh 22, Pa.



Battery operated

An open, a dead short, or a high resistance short, 10,000 ohms or less, can be located with this No. CFF-1 Fault Finder. It consists of a transmitter that connects to one end of the cable to generate a signal and a probe equipped receiver and ear phone with which an operator moves along the cable to search out the fault and identify it. The equipment packs into an aluminum carrying case that measures 15½ by 7¾ by 5¾ inches.

The signal generated by the transmitter creates an electrostatic field around the cable. The receiver picks up this field through its probe and converts it into an audible signal in the earphone. This signal will change in intensity or character, or will terminate, at the fault. The equipment can be employed to salvage cable and to assist in making repairs in defective circuits in cable insulated with rubber, neoprene, plastic.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

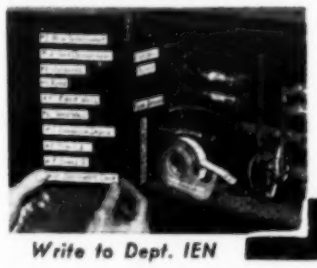
If you write maker identify as IEN - 9335

WON'T SMUDGE • RESISTS: DIRT GREASE WATER ACIDS

LABELON PLASTIC Write on it TAPE

STICKS WITHOUT MOISTENING

For STOCKROOM, INVENTORY, ROUTING, MAINTENANCE, etc.



Nothing else like LABELON—the amazing "Write on it" plastic tape! Use it to label stockroom shelves, bins, tools, hard-to-mark parts; for indicating rejects and service department repairs; for marking laboratory equipment, supplies, experiments; for panel boards or wiring; for office files, folders, etc.

LABELON TAPE sticks without moistening to any smooth, clean surface—yet can be quickly removed. Resists heat up to 160°. Just write on it with pencil or stylus—message won't smudge. Choice of widths and colors. Handy dispenser with cutter bar.

See your nearest dealer, or write for sample and prices.

Write to Dept. IEN

LABELON TAPE CO., INC.
450 Atlantic Ave., Rochester 9, N. Y.

If you write maker identify as IEN - 9336

DELRAC Resiment

the Furane Resin Cement that

• RESISTS CORROSION – Acids, Alkalies, Solvents

• SETS PERFECTLY – Summer or Winter

• WITHSTANDS HEAT – Temperatures up to 375° F.

Highly efficient as a mortar for corrosion-resistant masonry, Resiment is low in porosity and high in compressive and tensile strength. It is supplied in the form of powder and liquid, in proper combinations, for mixing at time of use. Sets quickly by internal chemical reaction.

Write for Folder and Prices

DELRAC CORPORATION
132 Mill St. Watertown, N. Y.

If you write maker identify as IEN - 9337

"GIBRALTAR" OILS and GREASES REDUCE MAINTENANCE COSTS

With 44 years experience in the industrial field, we are in position to help solve your lubrication problems.

We specialize in INDUSTRIAL LUBRICANTS for all INDUSTRIAL applications.

Our Oils prevent hard carbon, varnish, sludge and other known conditions.

Our Oils and Greases will reduce maintenance costs and down hours.

"GIBRALTAR" Oil Concentrates for lubricating oils and fuel oils.

"GIBRALTAR" Rad-Treate for rust preventive.

Complete line of "GIBRALTAR" lubricating oils for compressors, diesel engines, steam engines, gasoline engines and lithographing ovens.

Our Engineers will be glad to help you with your lubrication problems. We invite your inquiries, small or large.

HOOD REFINING COMPANY
Hood Building Manor, Pa.

If you write maker identify as **IEN - 9338**

I'M FOREVER BLOWING TROUBLES!

I'm a Clements-Cadillac blower-suction cleaner. I keep your machinery clean . . . no troublesome Dirt, Dust and Grime gremlins will slow down your smooth operation with me around. I'm a cleaning tool that reaches every nook in all types of equipment.

SAVE TIME • MONEY • PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 5 models with attachments for every cleaning job.

PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS CADILLAC

CLEMENTS MFG. CO.
6620 S. NARRAGANSETT AVE. CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

If you write maker identify as **IEN - 9339**

BERRY

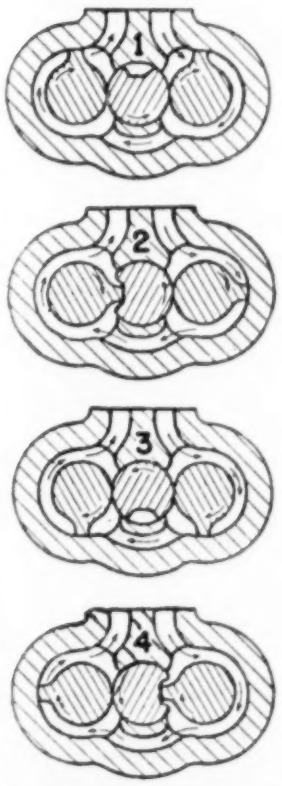
Rotodraulic TRADE MARK

Rotating Piston PUMP or MOTOR

Operation as a pump or as a motor is continuous, smooth, quiet, without pulsation. Basic simplicity gives the design long life with low maintenance as pumps in elevator service or on machine tools. Used as transmission in oil fields, mines, steel mills, mobile vehicles, the rugged construction endures many thousands of hours of rough treatment in all climates without servicing.

AS A MOTOR

All three members are geared together in a 1 : 1 ratio. Input shaft is on center member.



POSITION 1 . . Both pistons facing up, oil entering the right-hand port, driving both pistons in clockwise direction, exiting through the left port.

POSITION 2 . . Both pistons rotated to right, oil bypassing the left-hand one to the exit. The right-hand piston sealing against the center rotor or rolling seal.

POSITION 3 . . Both pistons rotated to face down, the oil driving both while the center rotor seals both pistons.

POSITION 4 . . Both pistons rotated to the left, the oil bypassing the right one and driving the left one. The left piston is sealing against the rolling seal.

Two pressure ratings are 500 and 1,500 PSI. Rating is 60 to 240 GPM. for the 500 PSI. assembly with one to four pumping chambers on a common shaft. Rating is 9.4 to 28.2 GPM. for the 1,500 PSI. pump with one to three chambers.

A third series of units, 32-10 model, is now available in one, two or three chambers. Capacities, as pumps, are 60, 120 and 180 GPM. Motor ratings to 300 horsepower and pressures are 1,000 psi. continuous; 1500 psi., intermittent.

CATALOG 5209

Explains action, shows sections and combinations, includes performance specifications and selection data.

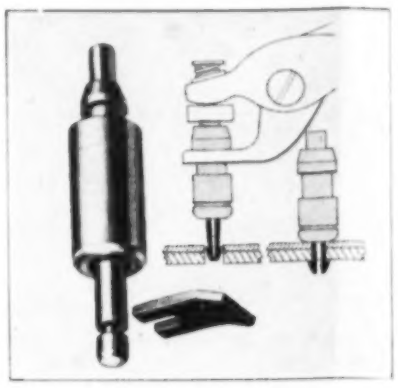
ALL MODELS OF ALL SERIES ARE AVAILABLE FOR IMMEDIATE SHIPMENT FROM STOCK.

Berry Division
Oliver Iron and Steel Corporation
1019 Oliver Building • Pittsburgh 22, Penna.

If you write maker identify as **IEN - 9341**

CLAMP . . Quick acting design for initial work assembly through hole

Source: WEDGELOCK COMPANY
5444-48 Satsuma Ave., North Hollywood, Calif.



Bulletin on request

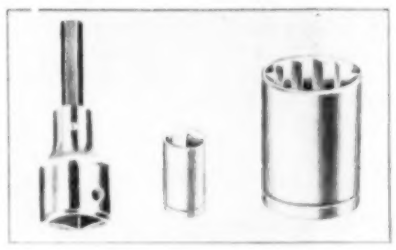
New sizes have been added to the Wedgelock line of quick-acting metal fasteners for fit-up application. The new units are available for hole diameters from No. 30 to 3/16 in., or more on specification, and for work thickness to 4 inches. In addition to fit-up, the clamp applies in holding work to a template, in jigs, fixtures.

Application is by compressing the plunger to advance the holding fingers for insertion and then releasing so the fingers retract and are spread by a central member. Spring actuated and hand operated, wing nut types are included in the new line. Access is required to only one side of the work.

If you write maker identify as **IEN - 9342**

WRENCHES . . For hollow screws and for metric sizes of bolt heads

Source: PROTO TOOLS
2207-11 Santa Fe Ave., Los Angeles 54, Calif.



European influence

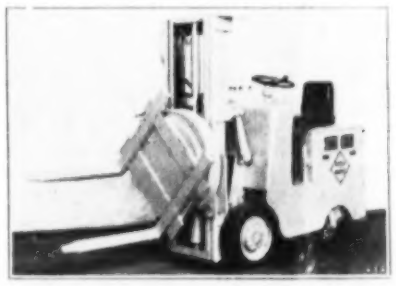
New wrench, to the left in the illustration, combines a square 3/8-in. socket drive and a hexagon bit measuring 1/8 to 3/8 inch. There are ten bit sizes for Allen-type screws from 1/4 to 3/4 inch.

The two sockets, in the center and to the right, are metric units. They combine a 1/4-in. square drive with nine metric openings from 4 to 12 mm. and a 1/2-in. drive with twelve openings from 12 to 32 millimeters. All are made of chromium plated alloy steel.

If you write maker identify as **IEN - 9343**

TRUCK . . Revolving attachment, hydraulic operation, to rotate a load

Source: ELWELL-PARKER ELECTRIC CO.
4060 St. Clair Ave., Cleveland 3, Ohio



Truck pump drives it

New assembly of stationary and rotating plates, with a gear connected hydraulic motor, mounts on the elevator plate of the company's standard fork trucks. The rotating table takes a pair of forks or other work handling equipment. This equipment can be rotated through a complete circle and stopped at any desired position, following rotation in either direction. The attachment is available with capacity to handle the truck's rated load. It can be placed and removed quickly.

It you write maker identify as **IEN - 9344**

CLEANING . . Vacuum machine combines floor cleaning and polishing

Source: COLUMBUS-DIXON INC.
5235-39 W. Byron St. Chicago 41, Ill.

Operates dry

The motor on this new Model-12 combination machine drives a pair of polishing brushes at 800 rpm. it also drives a suction blower to draw in air, at 61 cfm., for dust and dirt pickup. Operation is at 8,000 rpm. on a 110-volt ac. or dc. line.

The air and dust are delivered into a standard vacuum bag. Wax, placed on the floor, is distributed evenly and polished to present a finished clean surface. The machine will cover 1,800 to 2,000 sq. ft. of floor surface per hour. It lists at $185. A larger Model 18 rates to 3,200 sq. ft. per hour. It lists at $295.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9345**

Kohler Plug Valves

Aircraft • Industrial • Automotive

Drain cock for a helicopter fuel system, hydraulic control valve for machine tool operation, shut-off valve for instrument air line or control plug valve for industrial test stand – whatever your need, you can, to your advantage, use Kohler Plug Valves. They will meet all your lower pressure installation and operating specifications.

Kohler Plug Valves have a stainless steel plug, precision lapped into a forged aluminum body – and are furnished with two, three or four ports, with or without mounting flanges, and with two or three way drilled plugs. Write us regarding your next requirements.

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

If you write maker identify as **IEN - 9346**

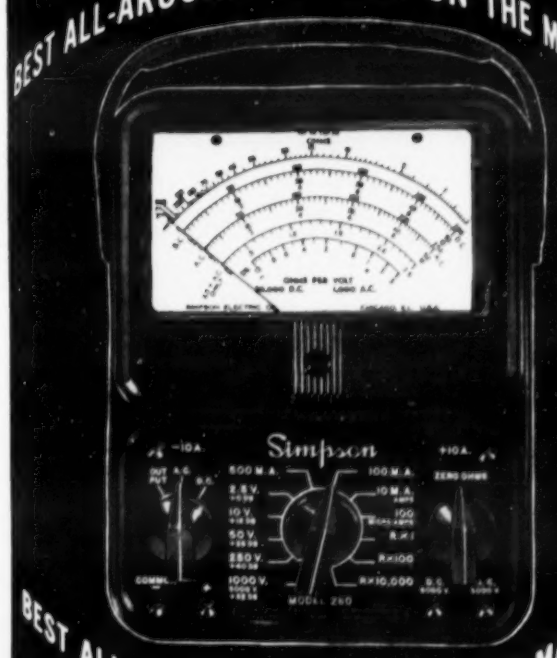
Simpson Model 260 VOLT-OHM-MILLIAMMETER

USE IT FOR:

- TV SETS
- RADIOS
- TRANSMITTERS
- BROADCASTING EQUIPMENT
- HOME APPLIANCES
- TWO-WAY RADIO COMMUNICATIONS SYSTEMS
- PHONE LINES
- AIR CONDITIONING SYSTEMS
- STARTER CONTROLS
- AUTO IGNITIONS, GENERATORS, BATTERIES
- MOVIE EQUIPMENT
- PANEL INSTRUMENTS
- TV CAMERAS
- AUTO LIGHTING SYSTEMS
- GENERATORS
- VOLTAGE SOURCES
- "HAM" RADIO EQUIPMENT
- CABLES
- CONNECTORS
- AUDIO FREQUENCY SOUND CURRENTS

. . . and write for your complimentary copy of "1001" Uses for the Simpson Model 260"

BEST ALL-AROUND TESTER ON THE MARKET



BEST ALL-AROUND TESTER ON THE MARKET

RANGES:
20,000 OHMS PER VOLT DC
1,000 OHMS PER VOLT AC
VOLTS, AC AND DC: 2.5, 10, 50, 250, 1,000, 5,000
OUTPUT: 2.5, 10, 50, 250, 1,000
MILLIAMPERES, DC: 10, 100, 500
MICROAMPERES, DC: 100
AMPERES, DC: 10
DECIBELS (9 RANGES): –12 TO +55 DB
OHMS: 0-2000 (12 OHMS CENTER), 0-200,000 (1,200 OHMS CENTER), 0-20 MEGOHMS (120,000 OHMS CENTER)

SIMPSON ELECTRIC COMPANY
5200 W. Kinzie St., Chicago 44 • EStebrook 9-1121
In Canada: Bach-Simpson, Ltd., London, Ont.

If you write maker identify as IEN - 9348

If you write maker identify as IEN - 9349

ON
ALBION'S VERSATILE NEW
SERIES 12 AND 13 CASTERS

● These completely new . . . completely practical industrial casters have extra-wide, extra-long, formed steel top plates to afford a greater variety of bolt hole spacings that will solve practically any attachment problems. Conservatively rated as *medium* duty industrials, they are built in a wide range of rigid and swivel models with wheel diameters from 3¼" to 8". Available with steel wheels or Texite, Moldon, Rolite or Noflex for complete floor protection and super-smooth operation.

If you want longer, better service and economy . . . plus caster versatility, be sure to get the facts from Albion. Write, wire or 'phone today for your free copy of the new illustrated specification sheets on the Series 12 and 13 Industrial Casters.

ALBION INDUSTRIES, INC.
ALBION, MICHIGAN

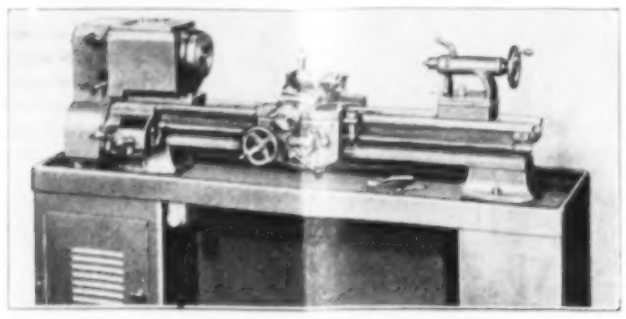
Gentlemen . . . please send me complete information on your new Series 12 and 13 Industrial Casters.

NAME _____
FIRM _____
ADDRESS _____
CITY _____ STATE _____

If you write maker identify as IEN - 9351

LATHE . . Pedestal base machine swings 12 in., 23 and 35 in. on centers

Source: LOGAN ENGINEERING CO.
4905 W. Lawrence Ave., Chicago 30, Ill.



Illustrated specifications on request

The spindle in this new 12-in. lathe is mounted in sealed precision ball bearings and carries a 1⅜-in. through hole. It is fitted with a 2¼-in. 8 pitch nose and a 6-in. drive plate. It is V-belt connected through a jackshaft and countershaft to the motor which the user mounts in the pedestal leg at the headstock end. There are eight spindle speeds between 235 and 1,260 rpm. in direct drive, based on a 1,750-rpm. motor. There are eight between 38 and 210 rpm. with the back gears engaged. A reversing switch is supplied for the motor.

The carriage mounts cross and compound slides and is fitted with graduated dials on the screws, a threading dial and a lever operated disc clutch. The tool post takes a ⅜ by ¾-in. holder for ¼-in. tool bits. Cross slide travel is 6¼ in. and compound travel is 2¼ inches. Longitudinal feeds range from 0.0018 to 0.1000 in. per revolution of the spindle. Cross feed is one-quarter this rate. The lathe can be set to cut 48 thread pitches, right or left hand, from 4 to 224 per inch. The lead screw is ¾-in. diameter, 8 pitch.

The tailstock takes a No. 2 Morse taper center and has 4 in. of spindle movement. It can be set over through 1⅛ in. for taper turning. Two sizes of the new lathe measure 59 and 71 in. in length, 21 in. width, 49 in. in height. Weight ranges from 950 to 1,010 pounds. Designation is 2955 and 2957.

If you write maker identify as IEN - 9352

WELDING . . DC arc machine in five ratings from 100 to 600 amp.

Source: NATIONAL CYLINDER GAS CO.
838-42 N. Michigan Ave., Chicago 11, Ill.

Sureweld design

Power input, at 220 or 440-volt, three-phase ac., is passed through a rectifier in this new dc. arc machine. It is a companion unit to the ac. arc machine previously described IEN-7193-53. Output current is characterized by ripple action that assists in holding a steady arc. Voltage recovery is essentially instantaneous after the arc has been momentarily shorted.

A transformer supplies ac. power to a full-wave selenium rectifier to provide the dc. output. Construction includes an integral reactor circuit with a saturable core. A motor driven fan draws cooling air through the rectifier stack and the transformer. A thermostat protects against overheating. Control centers at a variable rheostat. Welding leads plug in at the front of the housing.

If you write maker identify as IEN - 9353

CLEANING . . Steam spray machine is oil fired to deliver hot solvent

Source: KELITE PRODUCTS INC.
1248-52 N. Main St., Los Angeles 12, Calif.

Bulletin 128

Cleaning solution, mixed with steam, is delivered at the rate of 150 gph. by this new Model K15-A machine. Operation centers in a motor driven pump and a heating coil served by a burner that will handle gasoline or No. 3 diesel oil without alteration.

Pump and burner are started by electric switch controls, interlocked so the burner will not operate unless the pump is running. An additional control shuts the burner down in the event of water supply failure. The water passes through a preheat coil to conserve fuel and then enters the evaporating coil from which it issues as steam.

The machine measures about 55 by 27 by 48 inches. It weighs 825 lb. empty. It delivers through a 25-ft. length of 7-ply ½-in. inside diameter hose to the 51-in. balanced gun with its aerated grips and Hy-Vel nozzle.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9354

Sheehan's INDUSTRIAL CONVEYORS

FLAT TOP METAL BELT CONVEYORS

Versatile Durable Economical

Sheehan Flat Top Conveyors are being used to speed production parts through infra-red ovens, washing and degreasing operations. They are being used by food packing, metal working and many other industries in indoor installations and out of doors.

Metal belts of galvanized steel, electro-cadmium plated or stainless steel, driven by Sheehan Positive Drive Belt Sprocket assure production under many difficult conditions.

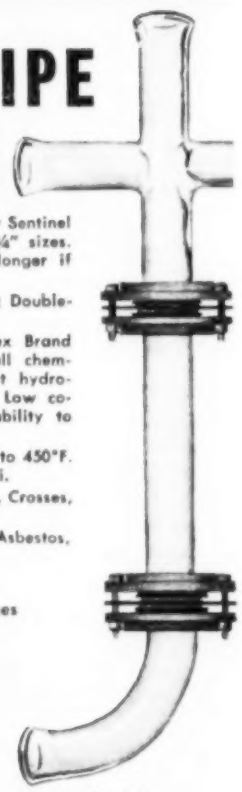
Sheehan Conveyors are designed to further production automation in every industry.

Complete literature and specifications for Sheehan Forge & Press Conveyors on request. Write or wire today!

Conveyors
R. T. SHEEHAN CO. PLYMOUTH, MICH.

If you write maker identify as IEN - 9355

SENTINEL
SMALL DIAMETER GLASS PIPE and FITTINGS



STOCK SIZES AND LENGTHS: Small Diameter Sentinel Glass Flanged Pipe in ¼", ⅜", ½", and ¾" sizes. Straight lengths to 72"; can be supplied longer if required.

Sizes larger than ¾", in Bulletin EA3—Pyrex Double-Tough Glass Pipe and Fittings.

Pipe and Fittings are fabricated from Pyrex Brand Glass Tubing. Corrosion-resistant against all chemicals and combinations of chemicals except hydrofluoric acid and hot concentrated alkalies. Low coefficient of expansion, gives remarkable ability to withstand thermal shock.

Normal operating temperatures up to 250°F. to 450°F. if precautions are taken. Pressures to 100 psi.

FITTINGS: 45° and 90° Elbows, Tees, U-Bends, Crosses, etc. Special Fittings to your specifications.

GASKETS: Teflon Envelopes, Teflon Snap-On, Asbestos, Gum Rubber, Neoprene, Koroseal.

NEW—PYREX GLASS TRAPS
in all sizes, for drain and waste lines

SENTINEL GLASS CO.
HATBORO, PENNA.

Send for Bulletin SG 11 and nearest distributor

If you write maker identify as IEN - 9356

Save Draftsmen's Time
YOUR TYPIST CAN DO THE JOB BETTER

The Vari-Typer lettering machine is the fastest and most economical method of lettering specifications on tracings and drawings. No more tedious time-consuming lettering operations requiring expensive time of skilled draftsmen.

The Vari-Typer lettering machine is four to five times faster than hand lettering and is operated by an office typist. Every letter and figure is uniformly clear and distinct. Instantly changeable type, with hundreds of different styles to choose from in sizes ranging from 6 pt. to 18 pt. Write today for information.

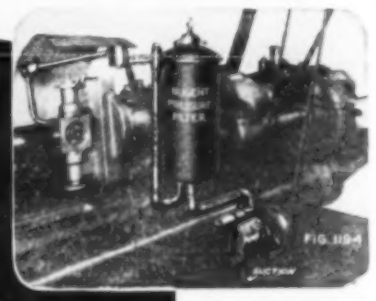
Vari-Typer
Lettering Machine

Body copy produced on DSJ Model. Headlines photo-composed on the Headliner.

RALPH C. COXHEAD CORP.
720 Frelinghuysen Avenue
Newark 5, N.J.
Please send Vari-Typer Book 189
NAME.....
COMPANY.....
ADDRESS.....
CITY.....ZONE...STATE....

If you write maker identify as IEN - 9357

20 times more Filtering Area with Nugent Cutting Oil and Coolant Filters



Nugent Pressure Filter installed on turret lathe for filtering cutting compound.

NUGENT Cutting Oil and Coolant Filters provide 20 times more filtering area than other filters of comparable size. This means better filtering—and better filtering means a great savings in lubricants, longer tool life and fewer rejects.

Nugent pressure filters of this type are built in capacities from 1/4 to 350 GPM for any machine that uses oil or cutting fluids.

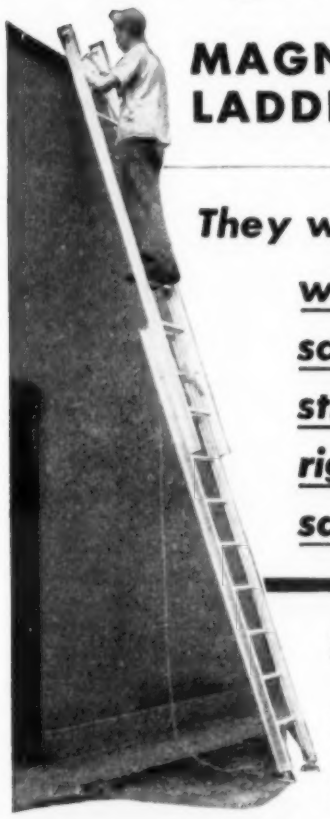
Write for Complete Information

Wm. W. Nugent & Co., Inc.
418 N. Hermitage Ave CHICAGO 22, ILLINOIS
Est. 1897

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . *Representatives in Principal Cities*

If you write maker identify as IEN - 9358

Make Work Safer . . . with light, STRONG MAGNESIUM LADDERS



They weigh less . . . with no sacrifice in strength, rigidity or safety!

SINGLE LADDERS

Sizes	Approx. Weight
4'	4 lbs.
6'	6 lbs.
8'	8 lbs.
10'	10 lbs.
12'	15 lbs.
14'	17 lbs.
16'	20 lbs.
18'	22 lbs.
20'	25 lbs.

EXTENSION LADDERS

Sizes	Approx. Weight
16'	21 lbs.
18'	24 lbs.
20'	26 lbs.
22'	29 lbs.
24'	32 lbs.
26'	35 lbs.
28'	46 lbs.
30'	50 lbs.
32'	54 lbs.
36'	60 lbs.
40'	66 lbs.

STEP LADDERS

Sizes	Approx. Weight
3'	7 lbs.
4'	8½ lbs.
5'	10 lbs.
6'	11½ lbs.
8'	15 lbs.
10'	19 lbs.

These new-type magnesium ladders are easier to handle, speed work and promote greater safety. They are made of extruded magnesium and meet every specification for safety and quality. Available in three types—single, step and extension.

Write for illustrated folder, Bulletin L-70.

WHATEVER THE NEED . . . When it comes to Ladders and Scaffolding—come to P. S.

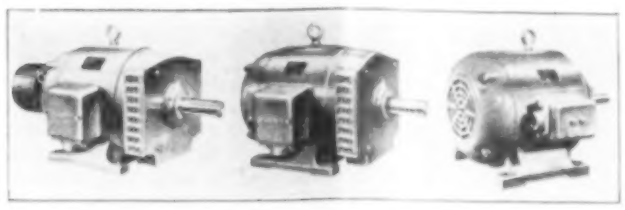
Gold Medal Ladders Scaffolding — for Greater Safety . . . Efficiency . . . Economy

THE PATENT SCAFFOLDING CO., Inc.
38-21 12th Street, Dept. IEN, Long Island City 1, N. Y.
Branches in All Principal Cities

If you write maker identify as IEN - 9360

MOTORS . . Totally enclosed and drip proof designs to 30 and 125 hp.

Source: NEWMAN INDUSTRIES INC.
43 Broad St., 8th Floor, New York 4, N. Y.



Made in England

The company announces availability in the United States of its lines of totally enclosed and of drip proof electric motors of which some 2,000,000 are now in use in many other countries. Each motor in the line is for continuous duty.

Capacities range to 30 hp. for totally enclosed fan cooled squirrel cage designs and to 125 hp. for drip proof wound rotor and squirrel cage units. The company has prepared a 20-page illustrated catalog containing specifications, illustrations and dimensions.

If you write maker identify as IEN - 9361

STRAPPING . . Portable kit to carry steel strap and tools to job

Source: BRAINARD STEEL DIVISION
1949 Larchmont Ave., Warren, Ohio

Small and compact

Utilikit is a new assembly of cardboard dispenser holding a 300-ft. coil of steel strap, with 1,000 seals, a stretcher, sealer and snips. The materials and tools ride in a handle equipped carrier as shown in the illustration.

If you write maker identify as IEN - 9362

HANDLING . . Wire basket to carry work and to permit processing

Source: JAXON WIRE PRODUCTS CO.
1715 Probert Road, Jackson, Mich.

Jaxon Open Mesh

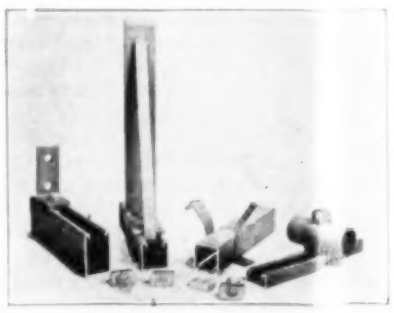
New wire basket in the company's line of materials handling equipment presents an open mesh so work can be put through washing and degreasing machines as well as transported from one location to another or stacked in storage. One end is bin shaped to provide access to the work pieces in stacked storage or to pour them out by up-ending the rear.

Dimensions overall are 13 by 27½ by 6½ inches. Weight is 13 pounds. Mesh openings can be specified at ⅜ or ½ inch. Plated finish is standard for this new line.

If you write maker identify as IEN - 9363

FABRICATING . . Steel channel and fittings to build shop structures

Source: M-H STANDARD CO.
513-17 Communipaw Ave., Jersey City 4, N. J.



Versabar Bulletin

Versabar trade names new rolled steel channel, available in four section sizes, and an assembly of fastenings and fittings with which to build structures such as racks, benches, support structures for piping and lighting equipment and to provide concrete inserts for equipment.

The four sections measure 1⅝ in. in width. Leg height is 13/16 to 2½ inches. Two of the sections are 14 gage. The other two are 12-gage steel. Standard lengths are 10 and 20 feet. Shorter pieces can be cut to specification. Recommended maximum column load for the 1⅝-in. 12-gage square section unit is 10,000 to 3,200 lb. on lengths measuring 2 to 10 feet.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

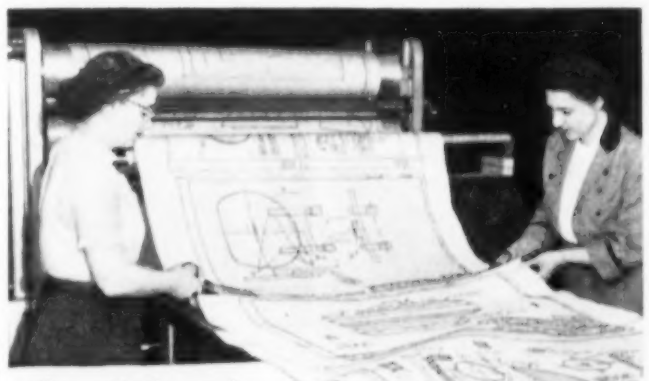
If you write maker identify as IEN - 9364

MERRILL MATERIALS HANDLING DEVICES

3-M-2

MERRILL BROTHERS
56-14 ARNOLD AVENUE MASPETH, N. Y.

If you write maker identify as IEN - 9365



These Kodagraph Autopositive Intermediates

Protect vital drawings

You're looking behind the scenes at the American Locomotive Company, Ordnance Division, Schenectady, New York.

The prints you see streaming from the processing machine are positive photographic reproductions of M47 tank drawings. They're produced without a negative step . . . and under room light.

This fast, low-cost operation enables the Ordnance Division to protect thousands of M47 drawings against costly wear and tear. For the drawings are filed away after the Autopositives are made. Then, because the engineering department of the Ordnance Division holds the design contract for the M47, these highly legible and durable intermediates are used to produce all the prints required by the 29 manufacturers and government agencies involved in the distribution of engineering changes on the M47 tank.

Produce better prints

These Kodagraph Autopositive intermediates, used in place of the valuable original drawings, produce sharp, legible blueprints or direct-process prints time after time. Their dense photographic black lines—on an evenly translucent paper base—will not smear or lose density . . . which simplifies print production and eliminates errors all along the line.

Advantages which you will appreciate, too, in your own operations. *And, remember, this is only part of the Autopositive story!*

Write for free booklet giving details on the revolutionary Kodagraph line, which you, or your blueprinter, can process . . . *quickly, economically.*

Kodagraph Reproduction Materials

"THE BIG NEW PLUS" in Engineering Drawing Reproduction

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak

If you write maker identify as IEN - 9367

Cut drafting time 40% with a BRUNING DRAFTER

Want to speed drafting in your office by as much as 40% – as proved by actual test? Here's how Bruning Drafters make such time savings possible:

COMBINES FIVE IN ONE . . . T-square, straightedge, triangle, protractor and scales are combined in a single precision machine.

EASY "FLOATING ACTION" . . . patented Equipoise mechanism counteracts gravity on inclined boards . . . mounted on friction-free needle bearings.

AUTOMATIC SETTINGS. . . at touch of button, Touch Control automatically locks Drafter at any of 24 commonly used 15-degree-increment angles. In-between angles are readily set.

FOR YOUR FILE . . . phone or write Bruning – there's an office near you – for free booklet on time-saving Bruning Drafting Machines. Charles Bruning Co., Dept R83, 4700 Montrose Ave., Chicago 41, Illinois. A-3-4

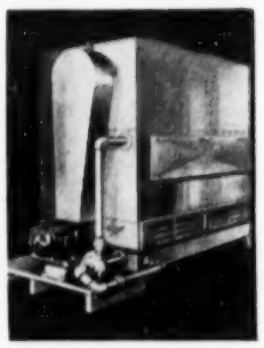
BRUNING

Everything for the Engineer and Draftsman

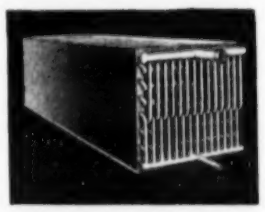
If you write maker identify as IEN - 9368

Tube Talk — THE "HOW-TO" COLUMN

PROBLEM: To find tubing of high and uniform quality for heat exchanger coils used in industrial coolers made by Marlo Coil Company. Coils handle ammonia and brine, but—most important—they are subject to very severe fabricating operations.



SOLUTION: Superior Carbon Steel Tubing (Analysis MT1015) for coils. ⅝" O.D. x .035" wall.



RESULT: Since adopting Superior tubing, quality has been consistently high. Size is uniform, tolerance is close, tubing is free from defects after bending and welding.

Suggestion—Write for information and literature today.

SUPERIOR TUBE COMPANY

2016 Germantown Ave., Norristown, Pa.

If you write maker identify as IEN - 9369

SPECIAL Fastener Problems Take Special Experience

THE illustration shows just a few of the many special Security Fasteners made in a wide variety of sizes and metals. Security Locknuts and Fasteners hold in *any* position on the bolt. They can be removed and replaced any number of times without damaging the bolt or without loss of locking effect. The fastener body takes the load not the locking ring and Security Fasteners operate as a one-piece unit. No extra parts, nothing to adjust, nothing to shear.

If you have a fastener problem challenge us to solve it! We would like to tell you what we have done for others. *Fill in and send the coupon.*

Security

THE NUT YOU CAN'T SHAKE LOOSE

SECURITY LOCKNUT CORP.
1508 North Ave.
Melrose Park, Ill.

Please send me without obligation:
☐ A Thread Tolerance Chart.
☐ We have a fastener problem and would like to know more about Security Locknuts.

Company Name .....
Address .....
Town ..... Zone ..... State .....
Signed .....

If you write maker identify as IEN - 9370

METER . . Multi-scale instrument available to read voltage or current

Source: MARION ELECTRICAL INSTRUMENT CO.
403 Canal St., Manchester, N. H.

The Multi-Dialer

Only one scale shows at a given time but this new electric meter, with its Ruggedized mechanism, can be set, by turning a knurled wheel in its face, to present any of five scales. Turning the wheel also sets the circuit for the scale that shows. The meter can be mounted in a 3½-in. JAN panel opening, or on a table with its combination handle and support.

Three instruments are available from stock at present. One reads 2.5 to 1,000 volts dc. in the five steps. The second reads 5 to 1,000 milliamperes dc. and the third reads 50 to 1,000 microamperes.

If you write maker identify as IEN - 9371

CORROSION PROOFING . . Vinyl liquid to brush or spray on metal surfaces

Source: UNITED CHROMIUM INC.
100 E. 42nd St., Room 1728, New York 17, N. Y.

Instructions upon request

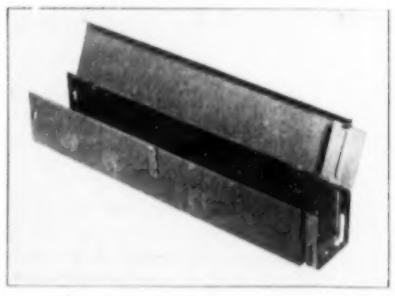
Ucilon 454 is a new air-drying modified vinyl liquid to protect metal surfaces against corrosion in the presence of mineral acids and hydrocarbons. It produces a film measuring 0.003 to 0.005 in. per coat. Usually two coats are sufficient. It is recommended particularly for protection against attack by petroleum and its derivatives.

The material can be employed in wet temperatures to 140 deg. F. or dry temperatures to 160 deg. F. For best results, it is applied over an initial priming coat of Ucilon 441. This primer produces a yellow-green organic phosphate coating with low hiding power. Ucilon 454 results in a gray-green coating. It can be covered with Ucilon 400 in other colors.

If you write maker identify as IEN - 9372

ELECTRIC DUCT . . Hinges open so conductors can be laid in place

Source: SQUARE D COMPANY
6058-62 Rivard St., Detroit 11, Mich.



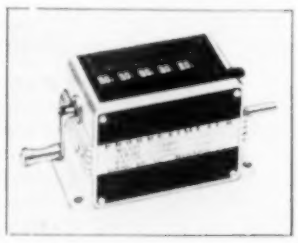
Underwriters approved

Lay-In trade names new electric duct with a hinged lid on three rigid sides. The lid can be opened and the conductors laid in place so "pulling-in" is not required. Three standardized sections measure 2½ by 2½ in., 4 by 4 in. and 6 by 6 inches. A line of fittings, with removable covers, applies with the duct to make a complete installation. Adapter fittings are available also to assemble the new duct with other designs in a previous installation. Knockouts match the company's switches, breakers, service equipment, contactors, starters.

If you write maker identify as IEN - 9373

COUNTING . . Five wheel unit actuates circuit on pre-set total

Source: DURANT MFG. CO.
1930 N. Buffum St., Milwaukee 1, Wis.



Counts to 99,999

One turn of the reset crank in this new design of the Model-SP Productimeter, previously described IEN-13376-52, brings the counter to zero position ready for the next pre-set run. It is particularly suited for coil winding machines and for equipment where high speed reset is required. The unit mounts five wheels. It is available for rotary or reciprocating drive. The rotary design will subtract when operated in reverse.

Each digit wheel is made up of two wheels, one of which is set manually to a predetermined number, after hinging the housing up for access to the interior. Circuit contacts are closed or opened, depending on the contact arrangement, when the count on the mating wheels reaches the set total. The control circuit rates 15 amp. on 110-volt ac. Figures on the wheels are ¼ in. in height by ⅛ in. in width. Dimensions of the rotary unit are about 4⅜ by 2⅛ by 2⅝ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9374

Signode Strapping Tools and Equipment for heavy freight securement. This set is used for expertly bracing open as well as closed cars of heavy industrial freight including stop-in-transit cars. They are well suited for truck freight securement, keeping loads from shifting on flat beds or within truck trailers.

Simple in design, they give continuous trouble-free long-lived service. Shown here are the stretcher, sealer, strapping, seals and mobile strap dispenser you need for applying 1¼" x .035 heavy-duty strapping—the size generally specified for heavy freight bracing. Excellent for freight docks.

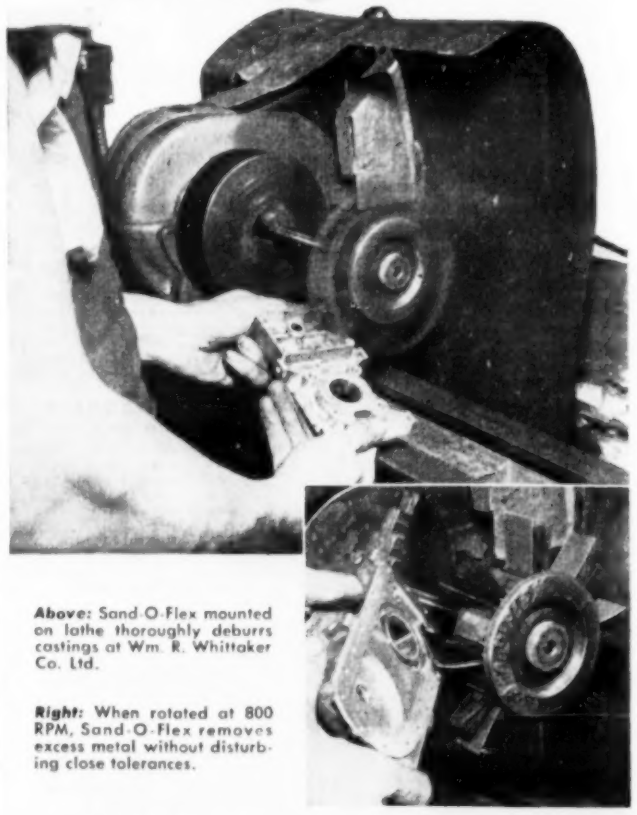
Let a Signode fieldman show your workman how to use these time and money-saving tools. Write SIGNODE STEEL STRAPPING COMPANY, 2611 North Western Avenue, Chicago 47, Illinois.

THIS SEAL MEANS SIGNODE SECURITY IN SHIPPING

If you write maker identify as IEN - 9375

No other sander but SAND-O-FLEX can do this deburring job

Here Sand-O-Flex is solving one of the toughest sanding and deburring problems in the entire metalworking industry—removing burrs and slivers from intricate light metal castings without gouging the metal, chamfering straight edges or affecting close tolerances. These aluminum fuel slide valve housings for aircraft are thoroughly deburred in a matter of seconds at Wm. R. Whittaker Co., Los Angeles. Sand-O-Flex gets down-in and around the intricate shapes where no other sander can reach, yet still preserves the machined surfaces necessary for perfect alignment when assembled.



Above: Sand-O-Flex mounted on lathe thoroughly deburrs castings at Wm. R. Whittaker Co. Ltd.

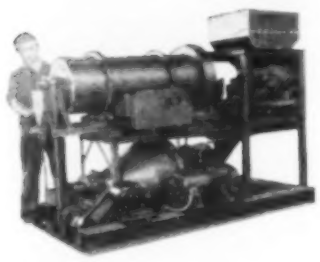
Right: When rotated at 800 RPM, Sand-O-Flex removes excess metal without disturbing close tolerances.

Sand-O-Flex is saving money and man-hours in thousands of deburring and finishing operations around the world. As the sander spins, flexible brushes gently mold the abrasive cloth over irregular surfaces, "wiping off" excess metal. The abrasive unwinds from a cartridge inside the metal case and is fed out as needed. Abrasives are furnished in many grits for a wide variety of applications. Sand-O-Flex is an attachment – it fastens to any rotating spindle (motor, lathe, drill press, electric hand drill, etc.) – no special equipment necessary. Four models, from portable to heavy duty production line uses. Write for catalog and prices. If you have a tough finishing problem, tell us about it. Perhaps we can help you.

MERIT PRODUCTS, INC.

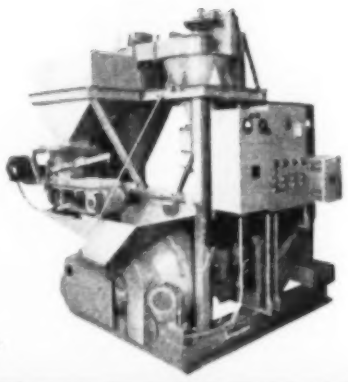
4023 IRVING PLACE, CULVER CITY, CALIF.

If you write maker identify as **IEN - 9377**



"PACKAGED PULVERIZER" for Wet or Dry Grinding

Whether your process is wet or dry, the Hardinge laboratory grinding unit is built especially for your pilot-plant, laboratory or small commercial operation. Completely self-contained and portable, it has grinding mill, classifier, product collector, feeder and "Electric Ear" Feed control. Needs only power connection (and water connection for wet grind) in order to operate.



HARDINGE
COMPANY, INCORPORATED

YORK, PENNSYLVANIA · 240 Arch St. · Main Office and Works
New York · Toronto · Chicago · Hibbing · Houston · Salt Lake City · San Francisco

If you write maker identify as **IEN - 9378**

FOR MATERIAL HANDLING— more and more—the swing is to wide-base pneumatic tires

GENERAL

INDUSTRIAL PNEUMATIC TIRES

More Designers are specifying wide-base General Pneumatics. They know Generals add these extra selling points to handling equipment.

SAVE TIME · MONEY · LABOR

- *MORE LOAD CAPACITY AT LOW OR HIGH SPEEDS*
- *CUSHION EQUIPMENT AND LOADS REDUCING BREAKAGE AND SPILLAGE*
- *SAVE HIGH COST FLOORS AND FLOOR SURFACES*
- *SLOW, EVEN WEAR FOR LONG SERVICE*
- *HIGH FLOTATION FOR EASIER ROLLING OVER SOFT GROUND*
- *ROLLS EASIER, SMOOTHER OVER ALL SURFACES*

Available separately or in assemblies of Tires, Tubes and Wheels. Size O.D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

THE GENERAL TIRE

Rigid **CASTER FORKS** *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

SEND FOR CATALOG . . . DEPT. 6

THE GENERAL TIRE & RUBBER CO. AKRON, O.

If you write maker identify as **IEN - 9380**

METER . . Valve equipped flowmeter to measure flow rate of air and gases

Source: WAUKEE ENGINEERING CO.
757-61 N. Milwaukee St., Milwaukee 2, Wis.

Bulletin 201

New valve has been developed to apply in the top of the company's standard flow meter. The valve can be set to limit the flow rate as required by changing conditions. The meter itself is the same as previously developed by the company. It consists of the float that rides inside the tapered metering tube, the connecting stem and the indicator at its bottom. It operates back of a scale on the oil filled tube. The oil dampens the action and also keeps out dirt. A colored tab at the bottom of the tube names the gas being handled.

Eleven meter sizes rate 10 to 1,500 cfh. in maximum gas handling capacity. Two overall heights are 19¼ and 20⅛ inches. The scale is 6 in. in length in each case.

If you write maker identify as **IEN - 9381**

CAPACITORS . . Midget units with leads anchored and tinned

Source: STACKPOLE CARBON CO.
1942 Tannery St., St. Marys, Pa.

Stable

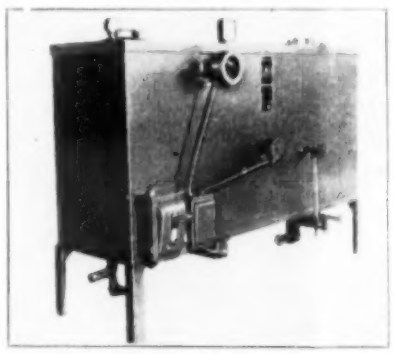
Body dimensions of this line of fixed composition capacitors, previously described IEN-5052-46, are 0.016 in. in diameter by 0.150 to 0.400 in. in length. The line has recently been expanded by addition of 39 new values so it now comprises 46 RTMA preferred values from 0.10 to 10.0 mmf. Standard tolerances are 5, 10 and 20 per cent.

Known as Type GA, the units are rated for 500-volt dc. Each employs molded titanium oxide or other high dielectric-constant body material for insulation resistance at 1,000 megohms or better. Temperature coefficient is within 2 per cent of 20 deg. C. in a range between minus 55 and plus 85 deg. C.

If you write maker identify as **IEN - 9382**

OIL CONDITIONER . . Takes water and solids from vacuum pump oil

Source: HONAN-CRANE CORP.
510 Indianapolis Ave., Lebanon, Ind.



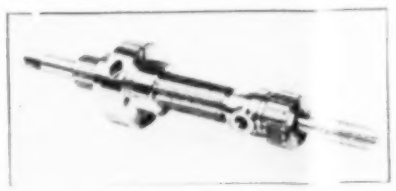
Quick opening lids

Two compartments in this new Dri-Pure oil conditioner assemble cartridges containing Palconia cellulose fibre and Cranite fullers earth. There is also an electrically heated settling tank with thermostat control. The equipment is for use on vacuum pump oil to keep it dry and clean for continuing use. It can be connected to serve one or more vacuum pumps and is available for turbines and hydraulic circuits where water is a problem.

If you write maker identify as **IEN - 9383**

THREADING . . Lead screw attachment for application on a drilling machine

Source: AUTOMATIC METHODS INC.
963-67 W. Grand St., Div. 145, Elizabeth, N. J.



For accurate threads

Standard pitches for machine threads, from 5/16 to 5/8 in. and 18 and 27 pitch respectively for ¼ and and ⅛-in. pipe, are included in the company's new 1-in. Auto-tap lead screw. The new assembly is designed for use with the Series-500 support arm in a vertical drilling machine. It supplements the smaller design with maximum capacity at 5/16 in., previously described IEN-247[illegible].

The screw is equipped with a driving shank, adjustable split nut to secure in the bracket and a Jacobs Rubberflex collet chuck. The chuck takes tap shanks to 5/8 inch. The screw carries ground threads and provides the axial tap movement so there is no drag in the threading action.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9384**

SPEED LOAD HANDLING for Truck, Shop or Machine

UNIT *utility* HOIST

Hydraulically operated Unit Utility Hoists can speed and ease handling of 1000 to 2000 lb. loads around your trucks, shop or machines, and the hoist itself can be switched from the truck, floor or machine mount in seconds. Three lifting points and boom extension give a wide working range. Hoist swings 360° on truck and locks securely in traveling position. Many uses in every plant.

Write today for latest information

UNIT MFG CO. 1221 Harmon Place, Minneapolis 3, Minnesota

If you write maker identify as **IEN - 9385**

BARBER COLMAN

Wheelco Instruments

FREE . . . to users of pyrometers . . . 42-page data book

Thermocouple facts and charts

Here's information to guide you in selection of proper sensing units and accessories for improved operation of temperature instruments. This 42-page Wheelco Data Book and Catalog gives you complete data on thermocouples, radiation thermocouples, resistance bulbs, and other accessories, including wire sizes, resistance and temperature millivolt curves. Write for your free copy today!

Factory-trained field engineers in all principal cities

WHEELCO INSTRUMENTS DIVISION · BARBER-COLMAN COMPANY
Dept. H, 1516 Rock St., Rockford, Illinois

If you write maker identify as **IEN - 9386**

they're SELF-LOCKING

IN ANY POSITION

on a threaded member

FLEXLOCS stay put in any position on a bolt or stud the moment the locking threads are fully engaged; they do not have to be seated. And FLEXLOCS stay tight, no matter how severe the vibration; are one piece, all metal; can be used repeatedly. One nut covers a temperature range up to 550° F. See your local industrial distributor for literature and samples or write SPS, Jenkintown 14, Pa.

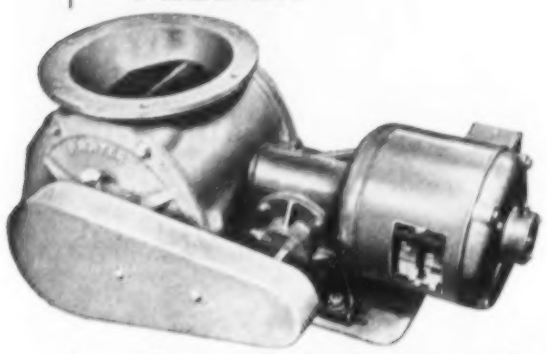
Our Fiftieth Year : A START FOR THE FUTURE

FLEXLOC LOCKNUT DIVISION

SPS JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 9387

PRATER ROTARY AIRLOCK FEEDER



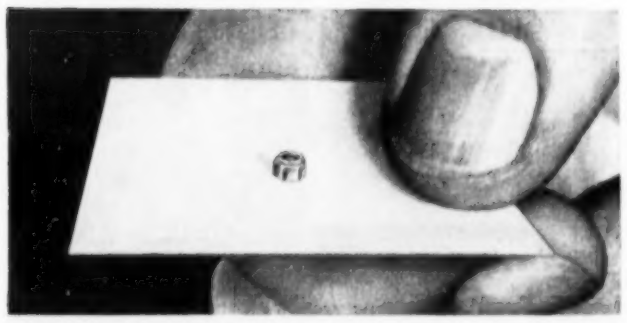
FEEDS powdered and granular products into conveying line—quickly and accurately!
STOPS air leakage at the discharge of dust collectors or other pneumatic equipment!
PRE-DETERMINES rate of feeding material into mixers, blenders, hoppers, etc.
RECOMMENDED in the processing of: Ball Clay, China Clay, Diatomaceous Earth, Kaolin, Grains and Feeds, Graphite, Limestone, Whey Powder, Calcium Carbonate, Sulphur, Fullers Earth, Ochre, Volcanic Ash, Bronze Powder, Bauxite, Carbon Black, Salt, Barium Carbonate, Marl, Sugar, Cocoa, Gypsum, Silica, Manganese Sulphate, Phenolic Molding Compound.

Send for new illustrated bulletin

PRATER PRATER PULVERIZER COMPANY
1536 So. 55th Court • Chicago 50, Ill.

If you write maker identify as IEN - 9388

Miniature ELASTIC STOP® nuts down to 0.109" across flats



NOW, miniature ELASTIC STOP nuts are available in sizes #0 through #4 in both SAE fine thread and USS coarse series—for special applications, such as electronics equipment and instruments. Smaller than any other self-locking nut they maintain a precise adjustment whether tightened against a seating surface or positioned at any point on a threaded member.

Nylon inserts make them self-locking, vibration-proof and re-usable, like all ELASTIC STOP nuts. They are simpler and less expensive to assemble than double nuts or soldered units.

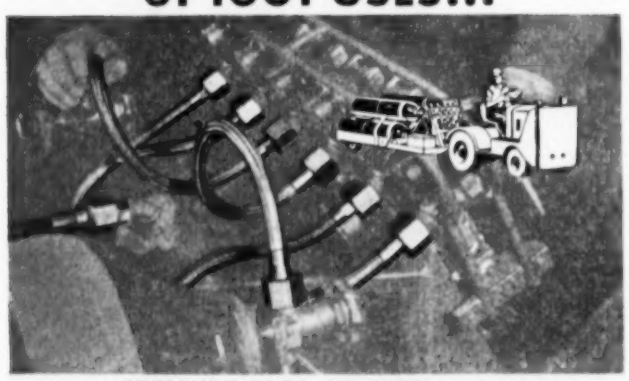
WRITE FOR design information on Miniature Nuts and other special and standard ESNA fasteners. Address Dept. N38-853.

ESNA

ELASTIC STOP NUT CORPORATION OF AMERICA
2330 Vauxhall Road, Union, N. J.
DESIGN HEADQUARTERS FOR SELF-LOCKING FASTENERS

If you write maker identify as IEN - 9389

FLEXIBLE METAL HOSE of 1001 USES...



PRESSURE-SAFE AT 2400 p.s.i.

Titeflex's seamless metal hose, Uniflex, in this application recharges combat planes with oxygen. The job requires a tough flexible hose that is pressure-tight and leak-proof, withstands corrosion, and vibration. For YOU, one of the many ranges of Titeflex hose can easily handle steam, gases, fuel, lubricants, air, water, many acids. Find out how Titeflex can solve your problem.

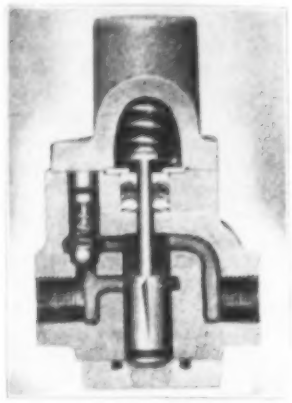
Titeflex

TITEFLEX, INC.
506 Frelinghuysen Ave., Newark 5, N.J.
Please let me have more information about TITEFLEX® Helically Wound Flexible Metal Hose and its uses.
Name
Title
Firm
Address
City Zone State

If you write maker identify as IEN - 9390

VALVE . . Hydraulic flow control limits load lowering speed on a truck

Source: BENTON HARBOR ENGINEERING WORKS
400-404 Eighth St., Benton Harbor 6, Mich.



No starting surge

A heavy load is lowered at less speed than a light one, for safe operation of a hydraulic load lift truck, when this new valve is installed in the hydraulic line or is built into the bottom of the load cylinder. It is available in ⅜, ½ and ¾-in. pipe sizes for specified maximum or minimum rate of travel on fork lift trucks rating 1 to 15 ton and on straddle trucks to 22½ ton.

The pressure line connects to the left, as the valve is shown in the illustration, and the cylinder is connected to the right. Fluid movement, to lift a load, is from left to right through the main port which is held open by a spring and through a ball check port that offers no resistance in this direction.

Release of lifting pressure and opening of the pressure line, to permit a load to come down, results in the check port closing immediately. At the same time, pressure in the line, determined by the weight of the load, acts downward through ports in the piston plug at the bottom to apply below the plug and raise it against the spring pressure. This partly closes the escape ports.

The greater the load, the higher the plug will ride and the smaller will be the V-shaped ports on the sides of the plug for a corresponding lessening of the downward speed. If there is no load on the forks, the pressure will not be sufficient to raise the plug. Then the escape port is not restricted and the forks will come down at maximum design speed.

If you write maker identify as IEN - 9391

ELEVATOR . . Hydraulic platform recesses into and bridges over a track

Source: ROTARY LIFT CO.
1097 Kentucky, Memphis 2, Tenn.

To specification

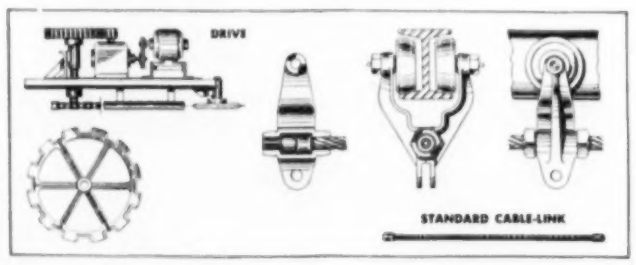
Oildraulic trade names a new hydraulic Transfer Bridge to install between two elevated platforms lying parallel to a railroad track. The bridge carries rail sections that make the track continuous in lowered position where it rests on concrete supports. It locks with the platforms in "up" position so there is no deflection when a load is passing over.

One or two hydraulic rams can be employed, depending on load and span. A second design, with one ram, permits rotating the bridge so it can be lowered into recessed position between two parallel tracks for wide two-track spans. A third design hinges up at one end in manner similar to a drawbridge.

If you write maker identify as IEN - 9392

CONVEYING . . Overhead trolleys on wire rope ride track in closed loop

Source: CABLE-LINK CORPORATION
20173-77 John R St., Detroit 3, Mich.



Ask for Cable Link bulletin

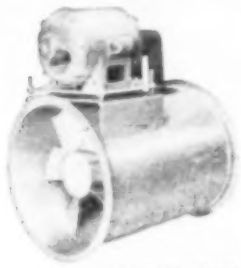
New design is announced by the company in its Cable-Link overhead conveyor. The equipment consists of load carrying trolleys, "links" of wire rope with connector fittings clamped on the ends, sprocket assemblies for horizontal turns and for drive, structural track on which the trolleys ride. Nuts thread on the split trolley hubs to hold each trolley in place on the rope fittings. The equipment can be installed for simple transportation of work between departments or for combinations of transportation and processing as in dip and oven operations.

Three models rate 80, 250, and 500 lb. in load capacity per trolley. They take links of 5/16, 7/16 and 9/16-in. wire rope Maximum pull load per drive is 1,500, 2,500 and 4,000 pounds. Each installation assembles in a closed loop that can include horizontal runs, dips, rises, turns, the latter in a radius depending on the "link" length.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

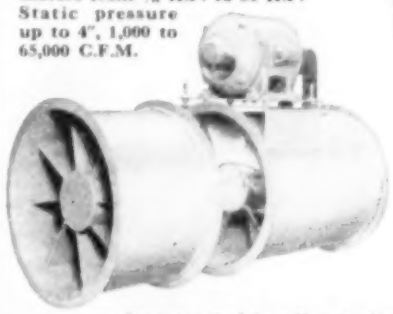
If you write maker identify as IEN - 9393

AIR



TUBEAXIAL FAN
Designed especially for the critical and toughest ventilation or exhaust problem. May be connected to inlet or outlet duct, or both, as the installation may require.

Industrial Air units are simple to install and maintain. Bearings and drive are completely protected from the exhaust air and can be replaced or serviced without removing the unit from the system. Available to your job needs and specifications, either direct or belt driven units, sizes from 12" to 48", motors from ⅛ H.P. to 50 H.P. Static pressure up to 4", 1,000 to 65,000 C.F.M.

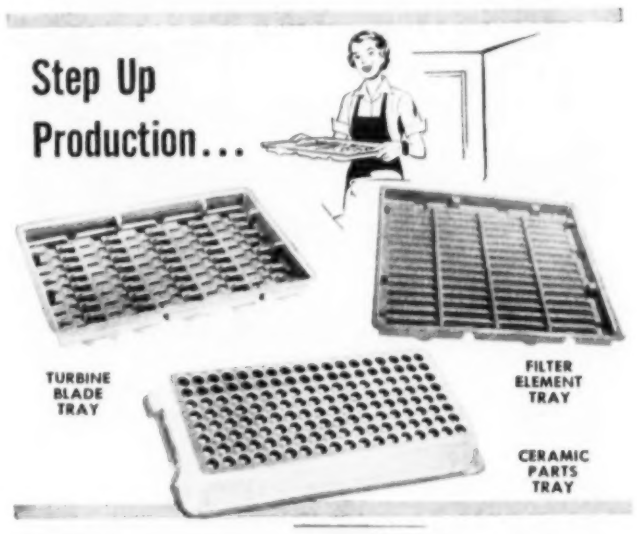


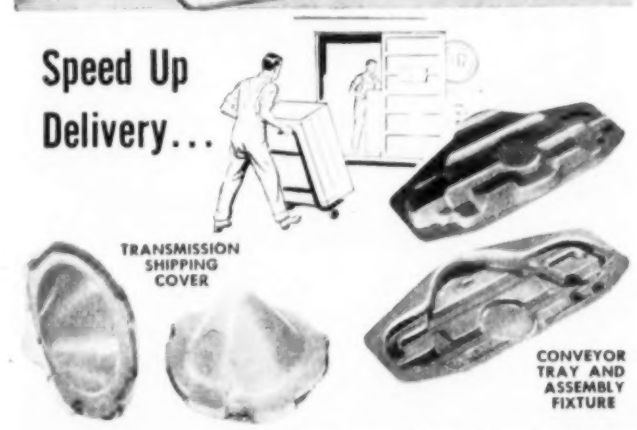
VANEAXIAL FAN
Illustration shows installation of vanes on the discharge side of propeller. Waste energy is converted to useful work. The guide vanes straighten out the air stream, assuring a true axial flow of air.

Represented in all principal cities
Write Dept. 400 for complete catalog

THE HARVEY P. BERTRAM CO.
561-565 READING ROAD - CINCINNATI 2, OHIO

If you write maker identify as IEN - 9394





(Photos courtesy of Jared Engineering & Mfg. Co.)

with Tough, Economical U. S. Royalite!

Trays and tote boxes individually designed to handle intricate and delicate parts can be made of U. S. Royalite on a faster, more economical basis than with conventional materials. This modern thermoplastic can be quickly formed into a wide range of shapes with integral supports and sections with no lost space . . . actually stepping up production by *absorbing* shock, cutting waste and adding weight-saving efficiency! Versatile U. S. Royalite speeds up handling, cuts product breakage in transit, cuts transportation weight costs. U. S. Royalite shipping covers and handling boxes can be engineered and fabricated to fully protect machine parts from unnecessary abuse, dust and foreign matter.

See how U. S. Royalite fits your specific production and handling problem. Write Dept. IEN-2 for full information.

Check List of U.S. ROYALITE Advantages:

- ✓ Lightweight
- ✓ Tough
- ✓ Non-splintering
- ✓ Non-warping, non-corrosive
- ✓ Impervious to oils, most acids, alkalies
- ✓ Highly resistant to impact
- ✓ Waterproof
- ✓ Easily formed on low-cost tools
- ✓ Prefinished to your specifications
- ✓ Color-permeated throughout
- ✓ Available in sheets
- ✓ Stable under changing atmospheric conditions
- ✓ Exceptional electrical insulating qualities
- ✓ Low rate of heat conductivity

U.S. ROYALITE
TOUGH PLASTIC PRODUCTS

UNITED STATES RUBBER COMPANY
2638 North Pulaski Road, Chicago 39, Illinois

If you write maker identify as IEN - 9396

For Access Panel and Door Assemblies

QUICK-LOCK speeds up mounting and demounting detachable panels. A 90° turn locks and unlocks it in a jiffy. Flexible mounting and tapered stud makes it ideal for assembling curved sheets and insures a tight fit when locked. Stud is self-ejecting when unlocked. Minimum deflection is assured—only initial loads are carried by the helical spring. Solid supports take up increased loads.

Call in a Simmons Engineer and compare QUICK-LOCK's economy with your present fastening method.

SIMMONS FASTENERS

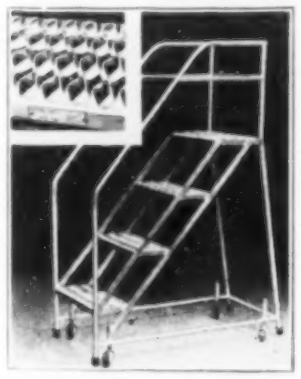
SIMMONS FASTENER CORPORATION • 1758 NORTH BROADWAY, ALBANY, N.Y.

If you write maker identify as IEN - 9397

If you write maker identify as IEN - 9399

LADDER . . Portable safety unit employs skid proof metal step treads

Source: BALLYMORE COMPANY
137-41 Pennsylvania Ave., Wayne, Pa.



Provides safe footing

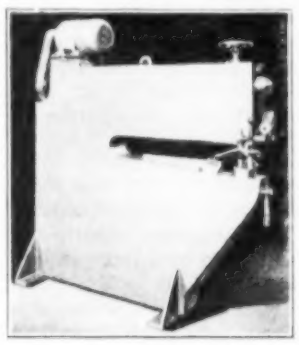
Safety treads, made of Globe formed steel grating, are optional on the company's new line of safety ladders. These treads are made by piercing and forming single sheets of steel to present skid proof edges in diamond shaped pattern over the tread surface. Metal chips, oil soaked paper and other objects are stripped from a worker's shoes by the raised edges and fall through the openings.

Construction includes four rubber shod legs and spring supported casters. The legs contact the floor when weight is placed on the steps. The assembly is available with one to eight steps, with safety handrails, and one to three steps without the rails.

If you write maker identify as IEN - 9400

SHEARING . . Motor driven machine for mild steel to 9/32 in., also beads

Source: WALES STRIPPIT CORP.
361 Payne Ave., North Tonawanda, N. Y.



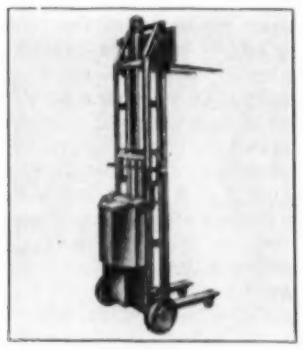
10 to 36 fpm.

Giant Model is a new size in the company's line of Tru-Edge shearing machines, previously described IEN-1078-53. The machine will start on inside or outside cuts, requires no starting hole. It produces a smooth edge on the sheared work on either a straight or curved outline. The bottom die is adjustable for varying thicknesses of metal and the machine can be set for cutting speed of 10 to 36 fpm., depending on gage and material. Throat depth is 36½ inches. The shear blades can be replaced with tools to form and bead.

If you write maker identify as IEN - 9401

TRUCK . . Hydraulic power lift uses 6-volt battery, rates to 1,250 lb.

Source: SAFWAY INDUSTRIAL EQUIPMENT CORP.
182-86 N. Franklin St., Chicago 6, Ill.



Ask for bulletin

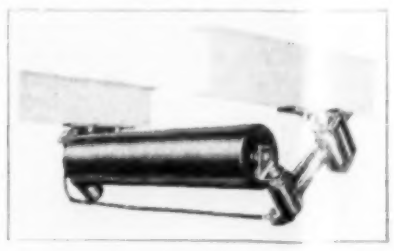
Three sizes in this new line of lift trucks all rate loads to 1,250 pounds. Three lift heights are to 68, 80 and 100 inches. Equipment includes a 6-volt automotive battery with a charger and connector to a 110-volt ac. line.

Forks are standard equipment. A plate can be added. The truck is designed for loading and unloading operations, for transfer of dies between presses and storage, for stacking and general utility. Model EL-4, with lift height to 80 in., lists at $685 at the manufacturer's plant.

If you write maker identify as IEN - 9402

CONVEYING . . Belt training idler keeps return run of a belt aligned

Source: CHAIN BELT CO.
4703 W. Greenfield Ave., Dept. PR, Milwaukee 1, Wis.



Prevents edge wear

Pivoted arms face down and in the direction of belt travel at a 45-deg. angle in this new belt training or aligning idler. The arms support a stationary shaft carrying an idler roll on ball bearings. Lubrication can be provided for the bearings on one or both sides of a conveyor assembly.

Lateral movement of the belt results in increased weight on the side toward which it moves. This causes the weighted end of the idler to move forward and downward while the opposite end moves in the opposite directions. The idler then will lie in position to guide the belt back into correct alignment. Style 41 is available with a 5 or 6-in. steel roll. Style 41RC mounts a 5½-in. rubber covered spiral roll.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9403

introducing—

the Coffing COIL CHAIN SAFETY-PULL RATCHET LEVER HOIST

The Model RG is now available in 1,500- and 3,000-lb. capacities — other sizes will follow.

The Model RG is completely new, yet incorporates the time-proved ratchet and pawl principle originated by Coffing. Holds positively—always. No friction brakes to slip or freeze.

★ ★ ★

Sold by Industrial Distributors everywhere

Many New Advantages

COIL CHAIN. Swings or wraps in any direction for greater flexibility in use.

SIX OPERATING POSITIONS. Handle operates in any position, works on full or partial strokes.

BIG SAFETY FACTOR. The Model RG has 100 percent overload safety factor, although warranty covers only up to rated capacity.

SIMPLE TO SERVICE. The Model RG may be completely disassembled with only a screwdriver for easy servicing.

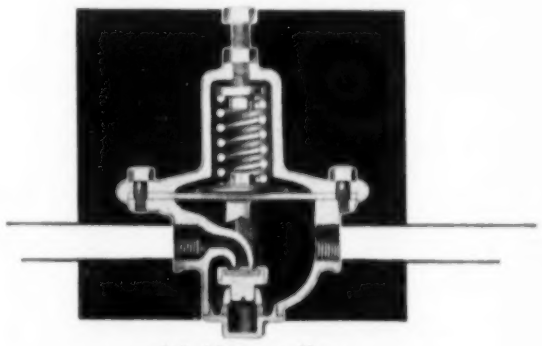
Find out more about the new Model RG hoist. Write for Bulletin PSR.

Quik-Lift Electric Hoists
Hoist-Alls • Load Binders
Mighty-Midget Pullers
Spur-Geared Hoists
Differential Chain Hoists
I-Beam Trolleys

COFFING HOIST COMPANY
DANVILLE, ILLINOIS

If you write maker identify as IEN - 9404

STOP DESTRUCTIVE VIBRATION OF WATER LINES



with Masoneilan Water Reducing Valves

By maintaining uniform industrial or domestic water pressures, this compact, sturdy reducing valve not only reduces destructive strain on plumbing, but also stops "singing" and splashing from fixtures — without cutting down flow. Lasts for years with practically no maintenance.

Initial pressures up to 150 lbs., reduced to any pressure from 10 to 100 lbs. Sizes from ¼" to 2".

Call your local Mason-Neilan Industrial Distributor for fast, dependable service.

MASON-NEILAN REGULATOR CO.
1188 Adams St., Boston 24, Mass., U. S. A.

If you write maker identify as IEN - 9405

standardize on standard UNBRAKO® SHOULDER SCREWS

UNBRAKO Shoulder Screws have numerous applications throughout industry. They can be used on stripper plates and pressure pads of die sets; as stationary or moving shafts or pivots; as stationary guides. These uniform, precision threaded industrial fasteners are carried in stock—¼" to ¾" diameter—by your local UNBRAKO industrial distributor. Write for literature. SPS, Jenkintown 14, Pa.

Our Fiftieth Year: A START FOR THE FUTURE

UNBRAKO SOCKET SCREW DIVISION

SPS JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 9406

WICKWIRE ROPE SLINGS

in braided and single part construction

Braided slings made by Wickwire give you these advantages:

- Extreme flexibility
- Non-kinking properties
- Better conformation to irregular surfaces
- More even load distribution
- Will not take a permanent set

Write or call our nearest sales office for full details.

THE COLORADO FUEL AND IRON CORP.—Abilene (Tex.) • Denver
Houston • Odessa (Tex.) • Phoenix • Salt Lake City • Tulsa
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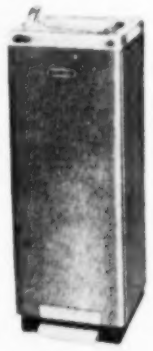
WICKWIRE ROPE
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

1.340

If you write maker identify as IEN - 9407

CORDLEY electric water coolers ...via Graybar

FREE catalog offers important selection data



Send for this illustrated catalog today. Specifications and selection data are included on the wide variety of Cordley air- and water-cooled models, explosion-proof, remote, and bottle-type coolers available nationally via Graybar.

It will pay you to investigate these Graybar distributed Cordley units. All Cordley electric models are backed by a 5-year warranty; they're sure to give long service life. Should a defect occur within the hermetic factory-sealed refrigerant system, the warranty covers replacement of the entire cooler.

Cordley units are available in models for office and plant use under widely varying conditions. For complete information on the Cordley electric water cooler best suited for your purposes, check with your local Graybar Representative. *Graybar Electric Co., Inc. Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.*

Call Graybar *first* for . . . Everything Electrical — Graybar Electric Company

335-128

If you write maker identify as IEN - 9408

Chicago MOUNTED Wheels

...now even better with **79E BOND**

Buy Chicago Mounted Wheels—bonded with 79E Bond—and you'll never use any other!

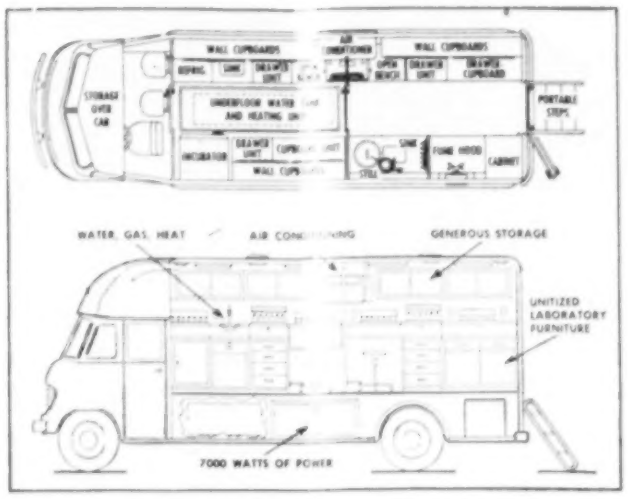
79E—a tough new bond exclusive with Chicago Wheel—is the sensation of the industry . . . it does a BETTER grinding, burring, and finishing job FASTER. A size and shape for every use. Deliveries are excellent—Order today.

CHICAGO WHEEL & Mfg. Co.
Dept. N • 1101 West Monroe Street, Chicago 7

If you write maker identify as IEN - 9409

TESTING . . Mobile laboratory for self-contained field operation

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.



Illustrated bulletin upon request

Mobilab is a new self-contained laboratory assembled in a Chevrolet bus body, insulated and equipped with an air conditioner. Several workers can use the 18-ft. aisle which runs from end to end and measures 34 in. in width. Head room is a little over 6½ feet. Overall dimensions are 25 by 8 ft. by 10 ft., 10 in. in clearance height.

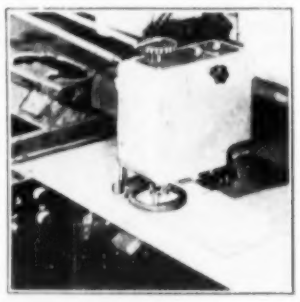
Electric power is supplied by two engine driven 3,500-watt generators to produce 115-volt 60-cycle ac. through a switchboard to eight circuits. There is a connection also for an outside power source. Water is pumped automatically from a 45-gal. insulated copper tank under the floor where it is protected against freezing in cold weather. An electrically heated still is fed from a 25-gal. reserve tank.

Burner gas is piped from two LPG tanks in a fire proofed skirt compartment. A mobile telephone or a two-way radio can be installed in the cab. A public address installation also is available. Furniture units are bolted together and to the floor. Drawers and cupboards are equipped with lock catches. Special shock mounting is provided for reagent bottles, glassware and instruments. The sinks are made of stainless steel. Storage space is provided in overhead wall cabinets and in compartments in the skirts and cab.

If you write maker identify as IEN - 9410

CUTTING . . Acetylene torch machine employs tracer to follow a template

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Room 308, New York 17, N. Y.



The tracer unit

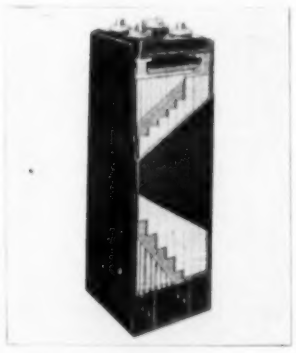
New tracer for automatic or manual actuation has been developed for use with the company's acetylene torch machine. The tracer operates with a template that is cut from a plastic sheet with scissors or a knife. It has an adjustment to provide for kerf width to ¼ inch. The tracing stylus maintains positive contact with the template. It also can be guided manually to follow a line sketch or blueprint if desired.

Controls, for raising and lowering and for steering, are included on the housing with an "on-off" switch. Stepless variable speed, ranging from 2 to 30 ipm., can be preset or varied while the machine is in operation.

If you write maker identify as IEN - 9411

BATTERY . . Lead acid storage unit provides power for industrial trucks

Source: ELECTRIC STORAGE BATTERY CO.
Chestnut & 15th Sts., Philadelphia 1, Pa.



Note cell construction

Plastic tubes, slotted to permit the electrolyte to penetrate and also retain the active material, comprise the positive plates in this new Thrifty Hauler storage battery. They are sealed at the bottom with acid proof plastic. Spines, made of corrosion resistant Silvium, secure the tubes to the top cross bars. Plastic vent plugs on the cells can be removed quickly to add water.

The negative plates are made sufficiently heavy to balance with the positive tubes. Pormax separators are practically indestructible. The battery is mounted in a rubber shock proof jar for assembly in a steel tray coated with acid resistant plastic. Sealing compound, between the jar and the cover, resists shock at high and low temperature.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9412

Fielden tektolog

ELECTRONIC RECORDER

- *Accurate to ±1% of Full Scale*
- *Operates directly from Low Energy Sources*
- *Simplified Design—Only 4 Principal Units*
- *Available with Electric or Pneumatic Controls*

The Fielden TEKTOLOG has a sensitivity of ±0.1%, mechanical reproducibility of ±0.5%, yet because of its simplified design, circuitry and construction is priced substantially lower than other types. Various recording speeds to suit applications. Pen equipped with non-clogging capillary tip suitable for high or low speed recording auxiliary control apparatus. Available with dust-tight, weather-proof cast aluminum housing. Easily installed . . . flush or surface mounted. Can be supplied with portable carrying case for mobility since critical leveling is not needed. Designed for *accurate* recording at low cost. Write today for details to Dept. E

Fielden
INSTRUMENT DIVISION
ROBERTSHAW-FULTON CONTROLS COMPANY
2920 N. 4th St., Philadelphia 33, Pa.
Dollar for Dollar—Your Best Instrument Value

If you write maker identify as IEN - 9413

Widest power range of any powder-actuated fastening tool

MODEL 450 REMINGTON STUD DRIVER

Six different 32 caliber charges meet every fastening requirement

Each of the six power loads for the Remington Stud Driver is designed to give the right power for the job — whether it's driving the stud into concrete or steel.

New, longer heel caps on all six cartridges mean a perfect gas seal ...assure arrow-straight driving. Bright colors indicate the right load instantly, no chance for error. You can select the *right* cartridge for each job...quickly and easily.

But exceptional power range is just one of the Remington Stud Driver's many advantages. This self-powered tool sets up to 5 fastening studs per minute...speeds construction jobs and cuts costs. Its light weight—only 5½ pounds—makes handling easy, even in confined places.

Test-proved to be the world's finest and speediest fastening system, the Model 450 Remington Stud Driver is made by the Remington Arms Company, Inc., *America's oldest sporting arms manufacturer.* Send in the coupon below for your free booklet describing the Stud Driver and its many uses.

"If It's Remington—It's Right!"

Remington DU PONT

—MAIL THIS COUPON TODAY—

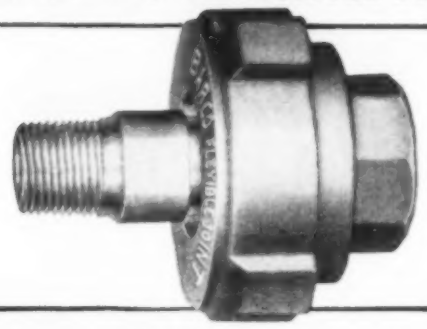
Industrial Sales Division, Dept. IEN-8
Remington Arms Company, Inc.
939 Barnum Ave., Bridgeport 2, Connecticut

Please send me my *free* copy of the new booklet showing how I can cut my fastening costs.

Name .....
Position .....
Firm .....
Address .....
City ..... *State* .....

If you write maker identify as IEN - 9415

NEW! LEAKPROOF ROTARY SWIVEL JOINTS



- **PERFECT SEALING—HOT OR COLD!** Thanks to Barco's new #11 CT (chemically inert) seal.
- **NO BINDING, LOW TORQUE!** For improved operation of press platens, die heads, movable cylinders.
- **SELF-ALIGNING!** Simplifies and speeds up installation. Minimizes wear. Where needed, joints without side flexibility can be supplied.

Send for complete information today. The Barco line is complete with sizes and styles to meet every need. BARCO MANUFACTURING CO., 538-J Hough St., Barrington, Illinois (A Chicago Suburb)

BARCO MFG. CO. In Canada: THE HOLDEN CO., LTD. Montreal, Canada

If you write maker identify as IEN - 9416

FABRICATED SCREENS STRAINERS

TO YOUR SPECIFICATIONS

- PRODUCTION RUNS
- HIGH QUALITY

NEWARK offers a "complete package" service in the design and manufacture of fabricated woven wire parts. We design and manufacture screens and strainers for all types of service; for handling oil, water, gasoline, air, corrosive gases or steam.

We manufacture the wire cloth, thus insuring its accuracy; we also do all the necessary cutting, forming, soldering, stamping, punching, welding and seaming. In other words, it's a NEWARK job from start to finish.

Newark Wire Cloth COMPANY

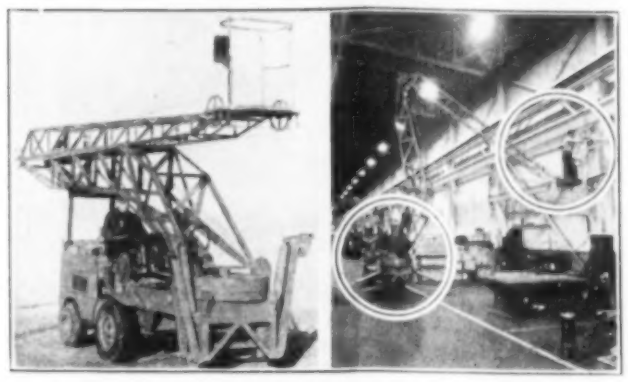
351 Verona Avenue • Newark 4, New Jersey

NEWARK for ACCURACY

If you write maker identify as IEN - 9418

ELEVATOR . . Mobile boom carries operator for overhead work

Source: MOBILE AERIAL TOWERS INC.
1403-7 N. Clinton St., Fort Wayne 2, Ind.



For overhead maintenance and construction

A worker, standing on the self-leveling platform of this new folding boom Sky Hook elevator, can position the platform at a maximum elevation of 43 ft. above the floor. He has an operating reach horizontally of about 50 feet. The turntable mounting, on a Towmotor truck in this new assembly, permits swinging through a 280-deg. arc. Load rating on the platform is 340 pounds. The assembly is completed by hydraulically operated outriggers.

Control centers at a master foot switch that must be held in depressed position to permit any movement. Releasing this switch immediately locks the control circuit and idles the truck engine. The unit represents further development of the Sky Hook previously described IEN-8682-51.

If you write maker identify as IEN - 9419

SOLDERING . . Alloy paste with flux for electrical connections

Source: FUSION ENGINEERING
4502-6 Superior Ave., Cleveland 3, Ohio

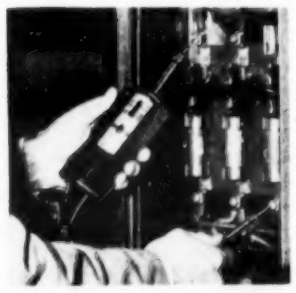
To complete printed circuits

Series HR is a new paste type solder containing an activated rosin flux to prevent corrosion. The solder had been developed particularly for electronic component assembly. It can be preapplied and then heated to complete the connection in automatic equipment. Metals contained in the solder conform to Federal specifications QQ-S-571-b.

If you write maker identify as IEN - 9420

TESTING . . Neon lamp, prods and connecting leads for circuit check

Source: IDEAL INDUSTRIES INC.
1108 Park Ave., Sycamore, Ill.



No exposed metal

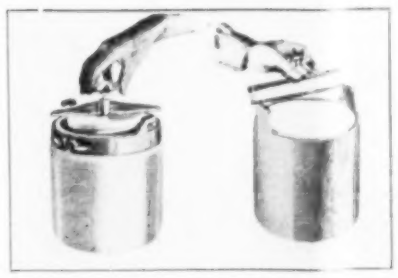
Super Safe is a new instrument to tell if a circuit is live, whether it is carrying ac. or dc. and what its nominal reading is in a range from 110 to 550 volts ac. and 110 to 600 volts dc. The solenoid indicator operates over a calibrated scale with numbers in color blocks to correspond with fuse label color codes.

Colored leads, 30-in. in length, are black with one prod red and the other black. Pockets in the housing provide safe storage for the prods when the instrument is not in use. Overall housing length is 5¾ inches. The prod tips are 1 in. in length.

If you write maker identify as IEN - 9421

MIXING . . Ceramic mill jar contains burundum to give it strength

Source: UNITED STATES STONEWARE CO.
Box 350-A, Akron 9, Ohio



Negligible contamination

Six sizes range from ½ pt. to 6.6 gal. in the company's new Roalox burundum-fortified mill jar, shown to the left in the illustration. One size, rating 1 gal., is in production in the Armored jar shown to the right. The new ceramic material is stronger and provides several times the wear life of plain ceramic jars.

The Roalox jar includes a locking lid for quick application and removal. The joint is sealed with a neoprene gasket. The Armored jar encloses the burundum-fortified jar in a metal housing. This assembly permits use until the jar material has worn through. Then a new jar can be applied in the housing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9422

CONTINUOUS DUTY

FULL BALL BEARING

This ¼" drill — $28.00*

MODEL 14AU • Jacobs 3-jaw chuck with key • Rugged aluminum alloy frame • 100% ball bearing • Heat treated alloy steel gears • Capacity in steel ¼", in hardwood ½" • Cool operating under constant use. Write today for name of Distributor and catalog No. US5.

*Price subject to change without notice.

United States Electrical Tool Division
THE EMERSON ELECTRIC MFG. CO.
1050 Findlay St. Cincinnati 14, Ohio

If you write maker identify as IEN - 9423

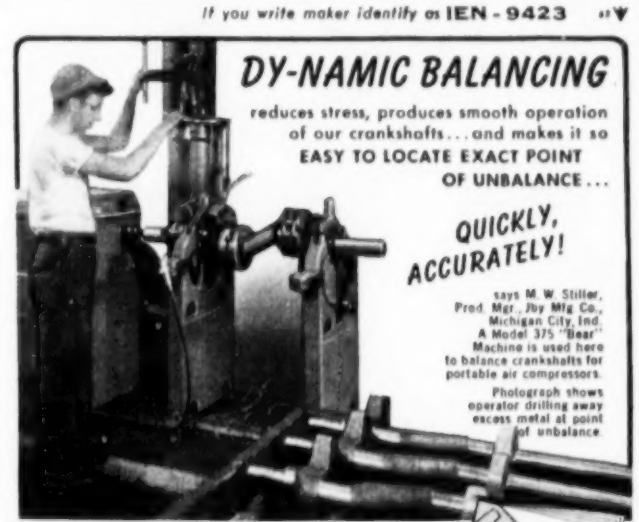
DY-NAMIC BALANCING

reduces stress, produces smooth operation of our crankshafts . . . and makes it so EASY TO LOCATE EXACT POINT OF UNBALANCE . . .

QUICKLY, ACCURATELY!

says M. W. Stiller, Prod. Mgr., Joy Mfg. Co., Michigan City, Ind. A Model 375 "Bear" Machine is used here to balance crankshafts for portable air compressors.

Photograph shows operator drilling away excess metal at point of unbalance.



Speed and accuracy are but two of many advantages which make "Bear" Dy-Namic Balancing the proven technique to reduce wear of valuable machinery . . . eliminate noise and vibration . . . and improve performance of the finished product.

SEND FOR FREE DY-NAMIC BALANCING MANUAL to learn of all the advantages of "Bear" Machines, 20 pages of tables, diagrams, application photographs and latest technological developments help show you how Dy-Namic Balancing can cut costs, mechanical failures and maintenance expense in your operation.

For your copy write: Bear Mfg. Co., Dept. I-5, Rock Island, Ill.

299

"BEAR" STATIC AND DY-NAMIC BALANCING MACHINES balance rotating parts weighing from 4 oz. to 8 tons

If you write maker identify as IEN - 9424

standardize on standard

HALLOWELL

SOLID STEEL COLLARS

Buy standardized, precision-made HALLOWELL Steel Collars from your distributor's stocks. You'll save time and money by picking up the telephone and placing your order. Deliveries are prompt.

42 stock sizes—for shafts from 3/16" to 3" diameter, inclusive—all positively positioned on the shafts by UNBRAKO Self-Locking Socket Set Screws, the screws that won't work loose.

Write for literature, and the name and address of your nearest HALLOWELL industrial distributor. SPS, Jenkintown 14, Pa.

Our Fiftieth Year : A START FOR THE FUTURE

HALLOWELL POWER TRANSMISSION DIVISION

SPS JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 9425

New by METZGAR

1. Safety Guard Bed protects personnel, conveys small packages and flat parts.
2. Live roller bed easily removable for cleaning or to convert to belt conveyor.
3. Drive controlled by shimming between beds 2 & 3 to more easily hold back load without cutting power.

STANDARD 11½", 15", 18", 24" WIDTHS
ANY LENGTH
220-440 Volt 60 Cycle 3 phase motor

WRITE FOR DETAILS

METZGAR CO.

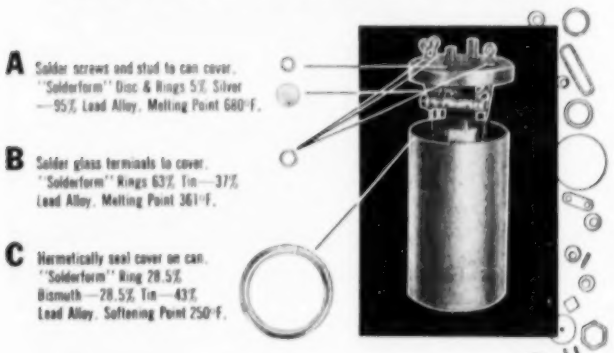
MFGRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES & REEL DOLLIES

417 Douglas, N. W.
GRAND RAPIDS 4, MICH.

If you write maker identify as IEN - 9426

3 Soldering Operations in 1 Easy as ABC with

KESTER "SOLDERFORMS"



Here's a typical example of a tough resistance soldering job involving progressively lower melting temperatures. Kester "Solderforms" made sure this high precision oscillator coil came through every test successfully.

WRITE TODAY for free "Solderform" samples and literature.

KESTER
SOLDER COMPANY
4211 Wrightwood Ave. • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

If you write maker identify as IEN - 9427

PIONEER BELT DRIVEN GENERATORS

the portable power you need in your plant to **DELIVER CURRENT EFFICIENTLY & ECONOMICALLY!**

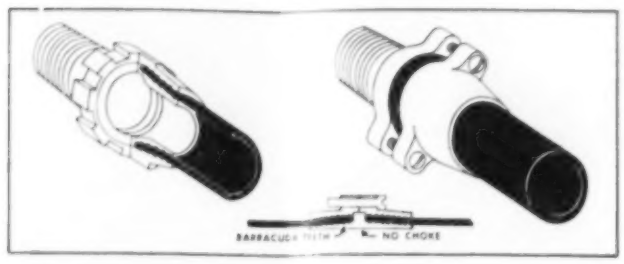
For portable power inside or out the plant, Pioneer Generators are *dependable* and *capable* of operating under *all* weather conditions. For Stand-By insurance when regular power fails, generators can run power tools and lights to meet all your needs. *Over 20 years* of manufacturing experience gives you engineering know-how and efficiency. **Write today** for catalogs and **prices on Pioneer 500 to 10,000 watt Generators for every industrial use.**

PIONEER Gen-E-Motor Corporation
5831 West Dickens Avenue • Chicago 39, Illinois

If you write maker identify as IEN - 9428

PIPE FITTINGS . . Brass adapters and a coupling for use on plastic pipe

Source: NELSON FOUNDRY CO.
6114-18 Oakton St., Morton Grove, Ill.



Barracuda is the trade name

Two adapters, shown in the illustration in spanner and screw design, and a coupling are available to install plastic pipe in sizes from ½ to 2 inches. The new fittings are made of brass and are characterized by the teeth on the internal bushing and the external sleeve. These teeth bite into the pipe to hold it securely when the fitting is assembled. The coupling differs from the adapters in its use of a double end tapered bushing and identical external sleeves. It is employed to join the ends of two runs of the plastic pipe.

If you write maker identify as IEN - 9429

WOOD WORKING . . Circular blade, carbide tipped for use on radial saws

Source: ROCKWELL MG. CO.
624 N. Lexington Ave., Pittsburgh 21, Pa.

24 to 36 tooth types

Three sizes are 10, 12 and 14-in. diameter in the company's new line of mass produced carbide tipped circular saw blades. The tips are brazed on a tool steel body. They are ground to include side clearance so swaging is not required. The blade is available to fit on standard arbors.

If you write maker identify as IEN - 9430

STORING . . Wardrobe rack holds 48 coats and hats in 3 ft. length

Source: VOGEL-PETERSON CO.
1119-23 W. 37th St., Chicago 9, Ill.

The Checkerette

Twin hanger bars in this new design of the company's collapsible rack, previously described IEN-086-49, double the normal capacity of a given rack. The 3-ft. unit will take 48 coats and hats. The 4-ft. assembly holds 64. Coat hangers can be used in place of hooks at a little loss in capacity. Combinations of hangers and hooks can be supplied. Ten of the racks can be knocked down and stored in 18 sq. ft. or carried on a light delivery truck. Construction is in welded steel.

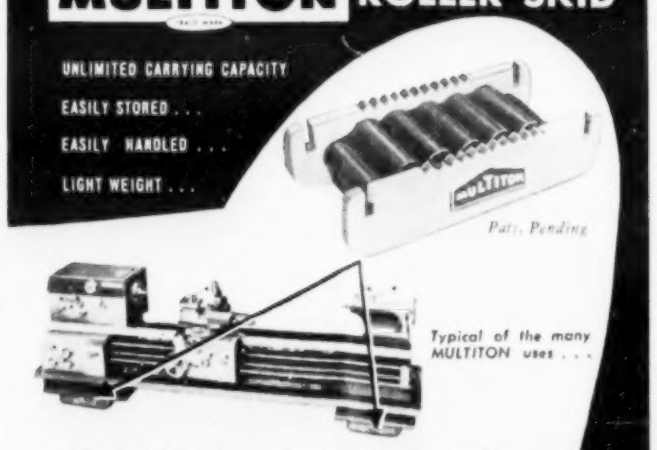
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9431

A BETTER WAY . . .
TO MOVE MACHINERY AND HEAVY EQUIPMENT

THE MIGHTY **MULTITON ROLLER SKID**

UNLIMITED CARRYING CAPACITY
EASILY STORED . . .
EASILY HANDLED . . .
LIGHT WEIGHT . . .



The first important advance in heavy equipment moving in years! MULTITON moves machinery and other heavy equipment easily — with great savings in labor. Just set tremendous loads on MULTITON and roll away.

Write for Bulletin IE

DEALER INQUIRIES INVITED

STOKVIS & EDERA & CO., INC.
95 MADISON AVE., NEW YORK 16, N. Y. • MU 3-4935

If you write maker identify as IEN - 9432

SAVE WIRE STRIPPING TIME . . . AT LEAST 90%!

Speedex AUTOMATIC **WIRE STRIPPER**

Fast . . . Single Squeeze Operation
Speedex strips both solid and stranded wire, sizes No. 10 to 22. "Delayed action return" prevents crushing. Interchangeable hardened steel blades. Ideal for shop or heavy production use!

MODEL NO. 766-1
NET PRICE $4.95 ($8.25 List)
Other Automatic and Standard Models Available

SEE YOUR DISTRIBUTOR OR WRITE FOR LITERATURE AND INFORMATION

WOOD SPECIALTY *Manufacturing Co.*
DIVISION OF GENERAL CEMENT MFG. CO.
909 Taylor Avenue • Rockford, Illinois

If you write maker identify as IEN - 9433

"NOW YOU CAN MAKE DRY PHOTOCOPIES IN ANY COLOR"

RIGHT IN YOUR OWN OFFICE INSTANTLY!

"COLOR-CODE" YOUR PHOTOCOPIES!

ALL ELECTRIC
APECO *Auto-Stat*
SYSTEMATIC

Increase office efficiency with copies in any color for immediate recognition, faster filing, speedier handling.

Makes photo-exact copies of anything typed, written, printed, drawn or photographed in any color or black and white.

Now make photocopies in color! The amazing Apeco Systematic Auto-Stat makes a dry photocopy in red, blue, green, yellow or any other color—including black and white—in less than 45 seconds. Now—"color-code" orders, invoices, letters, etc.—speed up order filling and office procedure—save filing time! This lightning-fast copying machine prints from any original up to 11" wide, any length, whether printed on one or two sides opaque or translucent paper . . . all automatically. Finished copies are ready for instant use. Save up to 80% on copying cost by eliminating costly re-typing, hand copying, checking and outside copying service. Offers even greater savings in increased business efficiency.

SO LOW COST! A complete Apeco Systematic Auto-Stat installation is priced well within the budget of even the smallest firm.

PRE-PRINTED COPIES FOR SYSTEMS USE

Methods experts acclaim new pre-printed Auto-Stat copy system offering simplified office record procedure tailor-made to your particular needs.

HAVE YOU READ THIS FREE BOOK?

American Photocopy Equipment Co. Dept. IEN-83
2849 N. Clark St., Chicago 14, Ill.

Please rush me, without obligation, your factual book on "29 ways to save time and money" and the Apeco Auto-Stat story. I understand this free booklet pictures and tells how I can use Apeco Auto-Stat in my office

Name_____
Firm_____
Address_____
City_____ Zone____ State_____

If you write maker identify as IEN - 9435

AIRCRAFT DESIGN ENGINEERS can allow for continuously changing power and performance requirements through the complete *interchangeability* (on the same mounting base) of this new line of Guardian Aircraft Relays. Standard spacing of mounting bracket holes provides extreme flexibility. **It's the way to meet new control specifications without changes in frame drawings!** Units range from single pole, single throw (time delay available) to four pole, double throw contact combinations, with ratings from 10 amperes to 50 amperes at 28 v., D.C. All sealed in accordance with MIL-R-6106. Weights: from 7.5 ounces to 20.8 ounces. Write for Bulletin 1 AR.

200 Ampere Solenoid Contactor

NOTE THE PRECISE ALIGNMENT OF MOUNTING HOLES!

Specify from Guardian's complete range for every advantage of quick interchange:

GUARDIAN ELECTRIC
1620-J W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as IEN - 9436

UE

TEMPERATURE PRESSURE CONTROLS

Improve **YOUR PRODUCT!**

More dependable, more accurate controls bring big sales results!

Type E8N
Indicating Temperature Control, ranges 300° or 600° between −150° to 600° F. calibrated adjustment and ambient compensated.

Type J40
Compact, skeleton pressure control for local mounting to control up to 250 psi in general industrial applications.

Type J96
Sensitive pressure-vacuum control for 30" hg. to 100 psi with explosion-proof housing for hazardous locations.

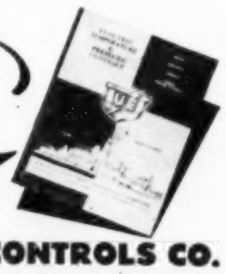
Progressive manufacturers throughout the country know the importance of having the *right* temperature or pressure control on their products. It really pays off—in product quality and in SALES. Hundreds of companies, of all types, turn to United Electric for the finest controls, to be used as original equipment on their products.

Controls are developed from United's wide line of standard models or are specially built as a result of teamwork by United Electric engineers and the manufacturer's product development group.

We can handle practically any pressure control problem between limits of 30" mercury vacuum to 1000 psi or temperature control problems between limits of −150° F. to 600° F.

Want to know more? Write for our new catalog. It shows pressure and temperature controls for marine, industrial aircraft and representative special purpose uses. And it's yours for the asking.

Write for New free Catalog...

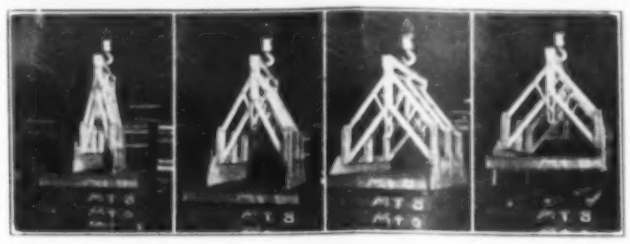


UNITED ELECTRIC CONTROLS CO.
80-1 School Street, Watertown, Mass.

If you write maker identify as IEN - 9438

HANDLING . . Self-operating grab, controlled by crane operator, to 6 ton

Source: JAEGER MACHINE CO.
940 Dublin Ave., Columbus 16, Ohio



Operator lowers, slackens, pulls cord, lifts

The crane operator brings this new Sheet Lifter to rest on a pile of sheets or plates he wants to pick up. The lifter rides its small bottom wheels. It spreads its gripper arms toward the two edges of the pile when the crane ropes are slackened. A hydraulic check cylinder prevents return to closed position when the gripper arms ride over the edges and the grab moves down to span the pile.

At this point, the operator pulls a check valve cord. The hydraulic cylinder releases its hold on the gripper arms and they come together into lifting position on the two sides of the pile. Then the operator can lift the load for movement to a

A load that is being lowered into position on a pile is guided to alignment by fingers that hang down on one side of the grab, flush with its outer edge. The operator deposits the load and permits the grab to continue downward until its arms are pushed outward by load contact. The hydraulic check then holds them so the grab can be lifted free. A floor man places spacer blocks between loads.

The grab will handle sheets and plate measuring 24 to 72 in. in width. Greatest load height is 10 inches. Minimum space between stacks is 8 inches. Overall length is 96 inches. Height is 95 inches. Weight is about 1,700 pounds. List price is $1,200.

If you write maker identify as IEN - 9439

PURCHASING GUIDE . . Available free to Industrial Equipment News readers

Source: THOMAS PUBLISHING CO.
467 Eighth Avenue., New York 1, N. Y.

First come first served

We suggest your prompt reply to this offer to send you a free copy of the 1953 Edition of Thomas' Register Junior. In it are names, addresses and ratings of selected manufacturers under some 50,000 product headings. We anticipate a demand that will quickly take all of the limited edition, judging from its growth in popularity since it was first offered through Industrial Equipment News several years ago.

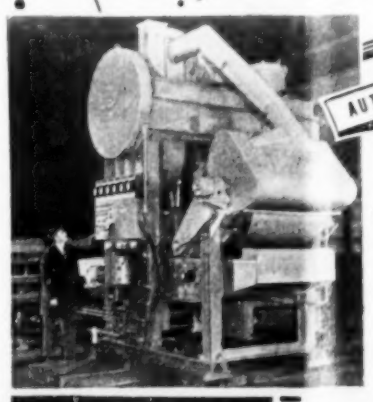
The book, a companion publication to the main Thomas' Register, will contain approximately 1,200 pages in four column 6 by 9 in. overall. It will be about 1½ in. in thickness. It is scheduled to come from the presses shortly and we will accept reservations as long as the supply lasts. You can make yours by checking the Reader Service Form with this issue or by writing to us.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9440

• NORTH ERIE • NORTH ERIE • NORTH ERIE • NORTH ERIE

NORTH ENGINEERING
. . . FOR LOWER COST PRODUCTION



AUTOMATIC FABRICATORS

AUTOMATIC FABRICATION and WORK HANDLING EQUIPMENT
•
PRODUCTION TOOLING and SPECIAL MACHINERY

NORTH Erie

THE H. W. NORTH Co.
1743 PARADE STREET
ERIE, PENNSYLVANIA

SPECIAL PURPOSE MACHINERY and EQUIPMENT for the BASIC INDUSTRIES

If you write maker identify as IEN - 9441

READY MIXED
"ROCK TRED"

a NEW floor ready for use IN 12 TO 24 HOURS

Heavy-Duty Rock-Tred offers the fastest, easiest, most economical method of obtaining a new, durable, heavy-load-bearing floor. Floors resurfaced with Spark-Proof Rock-Tred can be used for light service 12 to 16 hours after installation, and opened for heaviest traffic in 24 hours. Comes ready-mixed. Anyone can apply it. Extremely durable, no other re-surfacer equals its strength and lasting qualities. Handles any load that can be moved on wheels. Will not crack or crumble. It's the toughest floor on earth. Write for complete details. NOW!

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 5

If you write maker identify as IEN - 9442

Metso Cleaning...

Sparkling are the ink pots cleaned with Metso 99 Detergent. Metso wets oily ink quickly; holds it in suspension. Soluble silica, important component of Metso, prevents removed dirt from re-depositing. Get this quality of Metso 99 in your cleaning. You'll save time and money. Free trial sample on request.

Philadelphia Quartz Co.
1131 Public Ledger Building, Phila. 6, Pa.

METSO

Metso Detergents
PQ Silicates of Soda

If you write maker identify as IEN - 9443

TWIN DISC

HYDRO-SHEAVE DRIVE

Eliminates solid connection between power source and driven equipment.

- Smooths starting shocks
- Absorbs shock loads
- Prevents motor stalls
- Levels current load
- Protects motors and machinery
- Slips on shaft easily
- Applies to shaft of motor or engine—capacities ¾ to 50 hp. Available from Twin Disc hydraulic dealers everywhere.

TWIN DISC

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford, Illinois
BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TULSA

If you write maker identify as IEN - 9444

DAVIS No. 300-S MOTOR OPERATED VALVE

Many industrial plants have found that the Davis No. 300-S Motor Operated Valve solves many flow control problems on process lines, zone heating, and FIRE EMERGENCY SHUT OFF. This valve features: Direct connection between valve stem and 2-position motor . . . 30 second timing . . . 25 watt power consumption; no stand-by consumption . . . Renewable disc . . . No internal packing . . . Visible position indicator . . . and Davis' famous tight-closing, non-sticking, single seat, pilot stem design.

No. 300-S is available in sizes from ½" to 6" for various service requirements. Other designs for higher pressures and larger sizes. *Bulletin on request.*

Davis
DAVIS REGULATOR COMPANY
2529 South Washtenaw • Chicago 8, Illinois

If you write maker identify as IEN - 9445

Electronic Temperature Control

...with Alnor Accuracy

Alnor, pioneer in the field of electronic temperature instruments, brings you automatic, precise temperature control for heat-treating furnaces, bake ovens—in fact, for any heating device whether electrically heated or fuel fired. It's the Alnor Temperature Controller—simple in design and operation, its accuracy proved on thousands of installations in many industries.

Easily and quickly installed, this instrument is ready to give you accurate controller service on new or existing heating equipment temperature—you merely set the pointer at the desired temperature and forget your indicating and controlling problems. But find out for yourself how Alnor accuracy and dependability can serve you in controller service; write today for complete details on the Alnor Temperature Controller . . . Alnor accuracy at a price you can afford. Illinois Testing Laboratories, Inc., Room 517, 420 N. La Salle Street, Chicago 10, Illinois.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 9446

GET THIS NEW GUIDE TO **TUTHILL** GENERAL-PURPOSE PUMPS

- For Design
- For Production
- For Maintenance

The new Tuthill Catalog No. 102 provides a handy reference on general purpose pumps to fill your individual needs. It includes complete data on mechanically-sealed units, automatic reversing types, stripped pumps for built-in applications and other variations to meet specific requirements. You'll save time, trouble and money with this information.

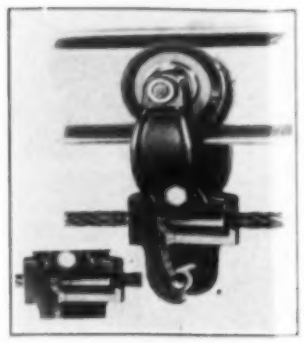
Write today for Tuthill Catalog No. 102.

TUTHILL PUMP COMPANY
Dependable Rotary Pumps since 1927
939 East 95th Street, Chicago 19, Illinois
Canadian Affiliate: Ingersoll Machine & Tool Company, Ltd. Ingersoll, Ontario, Canada

If you write maker identify as IEN - 9447

CONVEYING . . Overhead trolleys on wire rope ride track in closed loop

Source: E. W. BUSCHMAN CO.
4401 Clifton Ave., Cincinnati 32, Ohio



Bulletin 40

Load capacity is 100 or 200 lb. per trolley in this new equipment in the company's overhead conveyor line. The trolleys ride on 16-in. centers in clamped position on Bush-Lock bushings secured to the rope. The bushing is cut radially, to make two pieces, to connect the ends of the rope inside any carrier. Normally the splices are located on about 100-ft. centers. The track is a standard 3-in. I-beam.

Idler turns measure 30⅝ in. in pitch diameter. Variable speed drives, rating 750 and 1,500 lb. pull, are available. The standard and the Dubl-Duty trolleys are available with three types of ball bearing wheels. The new equipment supplements the initial design which employs ¼-in. wire rope, rates 80 or 160 lb. per trolley and is available with trolley spacing on 6, 12 or 15-in. centers.

If you write maker identify as IEN - 9448

GRINDING . . Silicon carbide wheel, resin bonded to sharpen carbide tools

Source: ELECTRO REFRACTORIES & ABRASIVES CO.
342-46 Delaware Ave., Buffalo 2, N. Y.

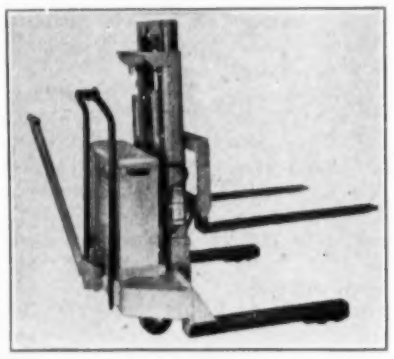
Excellent results with correct use

Straight and cup types are available in a new line of resinoid silicon carbide wheels for use on the shanks and the tips of carbide tipped tools. The straight units, most in demand, are in two sizes, 10 by ⅜ by 5 in. and 10 by ¼ by 1 inch. List prices are $2.85 and $2.20 each. The cup wheel is Type 11. The most popular sizes are 5/3 in. and 4/3 inch. They list at $3.40 and $2.50 each.

If you write maker identify as IEN - 9449

TRUCK . . Hydraulic power lift, straddle design for loads to one ton

Source: LIFT TRUCKS INC.
2545 Spring Grove Ave., Cincinnati 14, Ohio



Rides four wheels

Hydrolift Model HHL is a new all-purpose straddle type fork lift truck to handle pallets, skids, drums, sacks, press tools. It is moved by hand from one location to another. It can be employed to stack loads in a 5-ft. aisle.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9450

New! No Other Nameplate Like It

AMERICAN DECAL Stik-Tite

Quick Easy Water Application | Instant Setting | For Almost Every Surface

Manufacturers everywhere are switching to the new American Decal STIK-TITE for quicker, easier application—greater service. Applied with water alone, there is no need for costly time consuming varnishes, cements or solutions.

In addition to adhering to ordinary surfaces—painted metals, wood, glass, etc.—the STIK-TITE permanently grips most problem surfaces such as bare metals, raw wood, crinkle finishes, irregular surfaces, plastics, baked enamel, fibre board, etc.

The American Decal STIK-TITE necessitates no special drying, or clean-up, allows immediate packaging.

Write today for complete information and samples

American Decalcomania Co.
4334 Fifth Ave., Dept. L, Chicago 24, Ill.
New York • Cleveland • Windsor, Ont., Canada

If you write maker identify as IEN - 9451

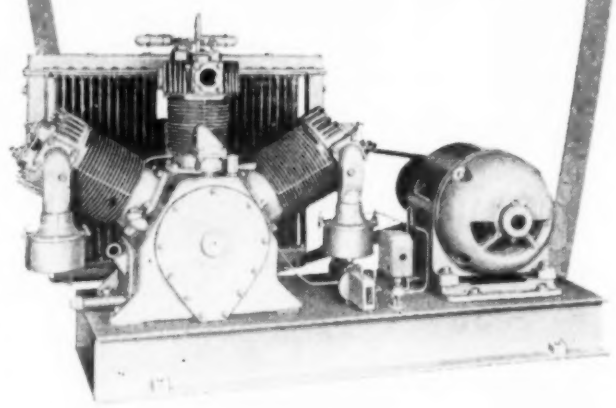
THE Model 10VA, shown, is one of eight models of All American Vibration Fatigue Testing Machines. The "10VA" produces vibration vertically in simple harmonic motion—from 10 to 55 cycles per second on automatic control and from 10 to 60 c.p.s. on manual control. Table load capacity 10 lbs. at 10g. Has 50% overload factor. Tests components, assemblies, products—exposes danger points—forestalls failures in the field. Simple to operate. Essential for today's inspection, testing, research. Send for Bulletin 551.

Manufacturers of All American Precision Die Filing Machines.

ALL AMERICAN Tool & Manufacturing Co.
8015 Lawndale Avenue, Skokie, Ill.

If you write maker identify as IEN - 9452

for performance and efficiency... you can't beat the Westinghouse 3-CMB AIR COMPRESSOR



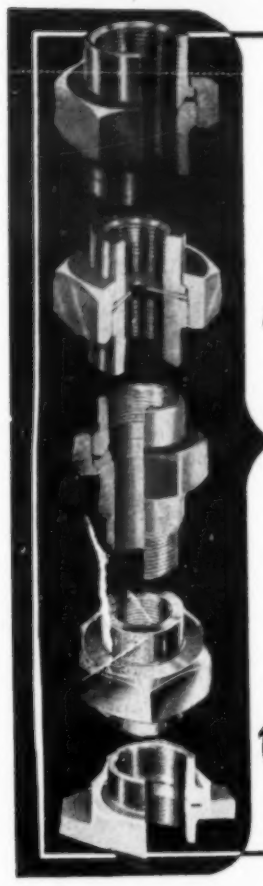
• If you are looking for the same kind of dependable Air Compressor performance that railroads require for their braking systems, install the Westinghouse 3-CMB Air Compressor. It's actually the same sturdy unit the railroads use, but mounted in a complete bedplate unit for industrial use.

The 3-CMB Air Compressor is a two-stage unit, equipped with a large intercooler to reduce temperatures between stages. That means high volumetric and power efficiency. The 3-CMB is designed for continuous operation at 150 psi. And dual control lets you shift between continuous running and start-stop operation at the turn of a lever.

You can get the Westinghouse 3-CMB Air Compressor in 25, 30 and 40 hp motor sizes with 138, 161 and 190 c.f.m. displacement. See your Westinghouse Air Compressor Dealer or send for our Bulletin 9452-12.

Westinghouse Air Brake COMPANY
INDUSTRIAL PRODUCTS DIVISION WILMERDING, PENNA.
Factory Branch: Emeryville, Calif.
In Canada: Canadian Westinghouse Co., Ltd., Hamilton, Ontario

If you write maker identify as IEN - 9454



A TYPE FOR EVERY USE!

Catawissa PERFECT SEAL Unions

for all temperatures for all pressures!

Catawissa Unions are HOT FORGED from solid rectangular steel bars to give sure-fire piping dependability! Exclusive Ball-to-Angle seat design gives A PERFECT SEAL EVEN WITH PIPE NOT IN ALIGNMENT!

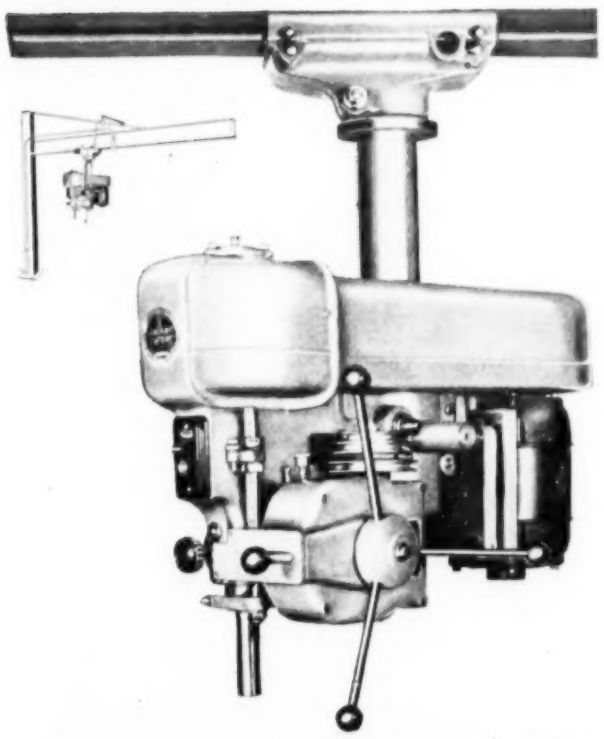
There's a Catawissa Union for every use, temperature and pressure . . . Standard and Double Extra Heavy; Orifice; Male & Female; Full Stainless, Full Alloy; Lug Nut. Choice of seats and socket weld or screwed ends.

Write for Catalog

STOCKED BY LEADING INDUSTRIAL DISTRIBUTORS

CATAWISSA VALVE & FITTINGS CO.
50 Mill St. • CATAWISSA, PA.

If you write maker identify as IEN - 9455



This WALKER-TURNER 20" OVERHEAD DRILL PRESS SET-UP

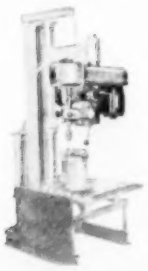
saves handling time . . . cuts costs

Wherever large or heavy parts or units are to be worked, this set-up—utilizing a WALKER-TURNER DRILL HEAD with its special ball-bearing carriage traveling along a boom—can save handling time and costs . . . bring new production economies. Special set-ups like this make it possible to get WALKER-TURNER precision drilling (either Hand or power feed) at surprisingly low cost.

WALKER-TURNER
• DIVISION •
KEARNEY AND TRECKER CORPORATION
PLAINFIELD, N. J.

SOLD ONLY THROUGH TRAINED INDUSTRIAL DISTRIBUTORS

DRILL PRESSES—Hand and Power Feed • RADIAL DRILLS • Wood and Metal Cutting BAND SAWS • TILTING ARBOR SAWS • RADIAL SAWS • JIG SAWS • LATHES • SPINDLE SHAPERS • JOINTERS BELT and DISC SURFACERS • FLEXIBLE SHAFT MACHINES



Almost Unlimited Application

WALKER-TURNER Drill Heads may be used for almost unlimited applications. The illustration below shows a set-up in daily use performing as a radial drill of extra large capacity. Horizontal and angular mountings—in single units or in batteries—are making substantial savings for hundreds of manufacturers. Phone your local distributor for full information on these Walker-Turner LIGHT-HEAVYWEIGHT Machines that are setting new records in industry the country over.

Use this space

to write for full details and specifications.
Walker-Turner Division, Kearney & Trecker Corp
Dept. IE8, Plainfield, N. J.
(Please write your name and address in margin of page)

If you write maker identify as IEN - 9457

ELEVATOR . . Portable hand unit, for utility applications, rates 500 lb.

Source: LEWIS-SHEPARD PRODUCTS INC.
190 Walnut St., Dept. R-24, Watertown 72, Mass.

For maintenance

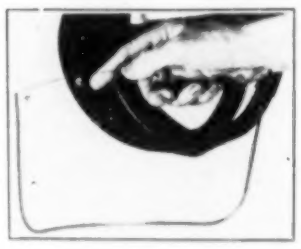
One turn of the hand crank on the planetary winch, with which this new Handy Hoister is equipped, will lift the load platform through 3 inches. The assembly will not overhaul so the platform will hold in any position. The mechanism is enclosed in a moisture and dust proof drum. The lift platform can be replaced by an arm to handle coils, or forks, or a roller equipped platform to assist in sliding loads on and off.

Two sizes mount 24 by 24-in. and 30 by 24-in. platforms. Heights are 71 and 76 inches. Lengths are about 36 and 43 inches.

If you write maker identify as IEN - 9458

PROTECTING . . Plastic face shield buttons in place on standard headgear

Source: BOYER-CAMPBELL CO.
6538-42 St. Antoine St., Detroit 2, Mich.



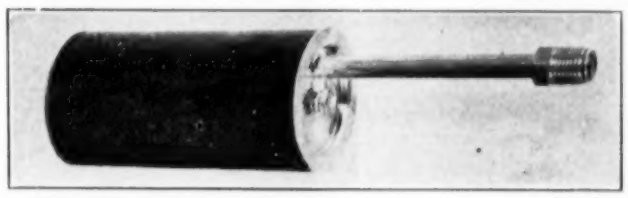
Buttons in slots

Sliding buttons are standard equipment on the new No. 300 face shield to assure trouble free assembly of the plastic shield and the headgear even if the latter warps due to moisture and heat. The shield protects against heat, flying dirt and scale. It is available also with a fiber front piece and glass window holder for use in gas welding and scarfing.

If you write maker identify as IEN - 9459

FILTERING . . Ribbon element to handle fuel and lubricating oils

Source: BENDIX-SKINNER DIVISION
1503 Trombly, Detroit 11, Mich.



Down to 40 microns

Expanded production facilities make it possible for the company to produce its ribbon filter element as an inexpensive replacement for metal edge and screen type elements for oil filtration. The permanent type assembly can be employed with flow to the inside or outside. It can be cleaned repeatedly. Diameter ranges from ½ to 6 in. in specified length.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9460

THE AD MAN WAS FLABBERGASTED

TO SHOW this ad man some real holding power, we set a #12 Rawlplug in concrete. Attaching a jack and scales, we applied a direct pull. Up, up climbed the indicator till, when the plug started to creep, it showed 2200 lbs! . . . Rawlplugs and other Rawl devices have tremendous holding power—and they come in a complete line. Order them from your usual supplier.

RAWLPLUGS
Fibre screw anchor for use with wood or lag screws. Only universal anchor that can be used in any material. Wood screw sizes #6 to #20; Lag screw sizes #⅜ to #⅝.

RAWL-ANCHORS
Heavy duty masonry anchor of "confined lead type" for holding bolts. Made in one piece—double ended—cannot be misapplied. Bolt sizes ¼" to 1"

RAWL-DRIVES
Only expansion bolt combining anchor and bolt in one piece. Simple to use, easy to install. Drives like nail into drilled hole. Tremendous holding power. Sizes 3/16" to ⅝"

RAWL-TAPERS
The improved machine screw anchor. The taper permits use in undersized holes, resulting in saving of drill costs. Machine screw sizes—6 x 32 to ⅝ x 11.

RAWL TOGGLE BOLTS
For simplicity of installation and security of anchoring any fixture or utility in hollow walls or ceilings.

RAWLDRILLS
Three point easy-to-sharpen masonry drills for hand and power drilling. For Rotary drilling—use Rawl Carbide tipped drills.

RAWL HAMMER-SETS
Newest type of heavy duty machine bolt anchor. Hammer is only tool needed to set it permanently in the masonry. Bolt sizes—3/16" to ⅝"

THE RAWLPLUG COMPANY, INC.
271 Church Street
New York 13, N. Y.

If you write maker identify as IEN - 9461

WHETHER IT'S ORIGINAL EQUIPMENT DESIGN OR CHANGING OVER TO AIR, YOU MAY SAVE ENORMOUSLY BY STANDARDIZING ON . . .

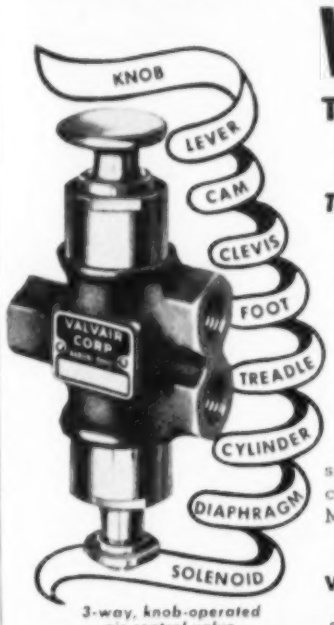
VALVAIRS

Thanks to Diversatility

★ ★ ★

ESPECIALLY ADAPTED TO TOOLING AND FIXTURE DESIGN

★ ★ ★



3-way, knob-operated air control valve.

• Valvair Diversatility is an exclusive, original form of standardization. Five basic bodies permit incorporating any one (or two) control assemblies with a standard valve body. Unique Valvair advantages enable us to speed your order at no extra cost. . . Sizes: ¼" through 1". May we fill your orders *now?*

Get New Bulletin "Q-8"

VALVAIR CORPORATION
Affiliate: Sinclair-Collins Valve Co.
949 Beardsley Ave., Akron 11, Ohio

REPRESENTATIVES IN PRINCIPAL CITIES

Rely Upon **Valvair** 2-WAY 3-WAY 4-WAY

If you write maker identify as IEN - 9462

JOHNSON *Rotary Pressure* JOINTS

Jam-packed with cost-cutting, efficiency-boosting characteristics, the Johnson Joint offers exciting possibilities you should know about. It's a packless, self-lubricating and self-adjusting way to get heating or cooling agents in or out of rotating machine parts; used on calenders, dryers, ironers, mills and similar machines. There are hundreds of design and production problems for which it holds the perfect answer.

Write for complete literature

The Johnson Corporation
846 Wood Street • Three Rivers, Mich.

If you write maker identify as IEN - 9463

GOING LIKE WILDFIRE!

WHERE CONCRETE FLOORS ARE PITTED AND RUINED BY ACIDS, ALKALIES, OIL, GREASE or EXCESSIVE WATER . . .

STONHARD STONPACH *IS THE DEAL!*

No other floor repair material can compare with STONPACH. Hard usage can't touch it! It resists chemical reaction and sets up flint-hard at only ½ inch thickness. Furthermore . . .

ALL INGREDIENTS COMPLETE IN ONE CONTAINER NOTHING ELSE TO BUY!

Find out today, how your own men can make a patch or do a complete overlay. Write for our *free* STONPACH BOOKLET.

STONHARD COMPANY
Building Maintenance Materials Since 1922
102 Stonhard Bldg., 1306 Spring Garden St., Philadelphia 23, Pa.

Yes, I want details on STONHARD STONPACH 102/8/53

Name .....
Company ..... Title .....
Address .....
City ..... Zone ..... State .....

If you write maker identify as IEN - 9464

Stop That Tramp Iron!

with STEARNS ELECTRO-MAGNETIC PULLEYS

A Stearns Electro-Magnetic Pulley protects your crushing equipment by removing all tramp iron automatically—economically. Reduce shut-down time and keep your repair charges LOW — install a Stearns Electro-Magnetic Pulley. It is the only economical and effective insurance against the tramp iron hazard.

For a thorough investigation of your separation problem, Stearns offers complete laboratory research facilities. Write today for details on testing of sample material.

1009

MAGNETIC EQUIPMENT **STEARNS** FOR ALL INDUSTRY **MAGNETS**

STEARNS MAGNETIC, INC.
626 South 28th Street, Milwaukee 46, Wis.

If you write maker identify as IEN - 9465

You Can Take the Word of 50,000 Firms

That SPEED SWEEP Floor Brushes Sweep Cleaner, Faster and Outlast Ordinary Brushes

Unique in design and construction, Speed Sweep so far outperforms and outlasts other floor brushes that over half of the nation's top rated firms use Speed Sweep under widely diversified sweeping conditions. We know Speed Sweep can do a better job for you, too. In fact, we guarantee it. We invite a trial order on that basis. Write for complete facts, including styles, sizes and prices today.

MILWAUKEE DUSTLESS BRUSH CO.
530 N. 22 STREET, MILWAUKEE 3, WISCONSIN

If you write maker identify as IEN - 9466

BLACK & DECKER POWER TRIO SPEEDS PRODUCTION

TOWSON, MD.—Powered by B&D-built universal motors, these production triplets of the Black & Decker Mfg. Co. are engineered to turn out more work at lower cost with fewer rejects. They're all perfectly balanced *with pistol grip and trigger switch* for easier handling, less worker fatigue. For demonstration, see any B&D distributor. For free literature, write: THE BLACK & DECKER MFG. CO., 608 Pennsylvania Ave., Towson 4, Md.

¼" HOLGUN* **$44.00** — Now 25% more powerful, can't be stalled at rated capacity.

¼" TAPGUN* **$105.00** — Threads holes in metal 8 times faster than by hand.

#12 SCRUGUN* **$59.50** — Now 50% more powerful for increased capacity.

*Trade Mark Reg. U. S. Pat. Off.

LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker
PORTABLE ELECTRIC TOOLS

"I WISH I HAD"

This column concentrates upon reader requests for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products.

It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

ALUMINUM BLANKS . . "I wish we had a source for about 10,000 aluminum rings measuring 1/16 by 3/32 in. in section by 8 to 10 in. in diameter. We are in Tampa, Florida." **IEN W-63**

NEW PRODUCT . . "I wish I had a buyer for my deep well pump, which is covered by Patent No. 2,626,569. The pump has been built and operated under test conditions and I can supply a complete set of drawings." **IEN W-64**

PLATING . . "I wish we had a source from which we could purchase a used automatic plating unit such as the design by Udylite Company. We also need a 6,000 amp. 18 volt dc. generator. We are located in Edgerton, Ohio." **IEN W-65**

RELAY . . "I wish we had a reverse phase relay that would be used to supervise a 2 phase or 3 phase power line and in case of phase reversal or power failure in any of the phases would actuate a set of contacts. We are interested in such a relay in any or all of the following voltages: 110, 208, 220, 440 and 550 volts ac." **IEN W-66**

SURPLUS . . "I wish we had a buyer for a 6-ft. Paasche new 5/8 in. round, Type 303 stainless steel in 12 ft. lengths. The material is in stock in Van Buren, Indiana." **IEN W-67**

SURPLUS . . "I wish we had a buyer for a 6-ft. Passche water wash spray booth, complete with motors, oscillating spray guns and accessories. The equipment is in storage in its original crate in Chicago Heights, Ill. We will send our original bill of lading list of parts upon request." **IEN W-68**

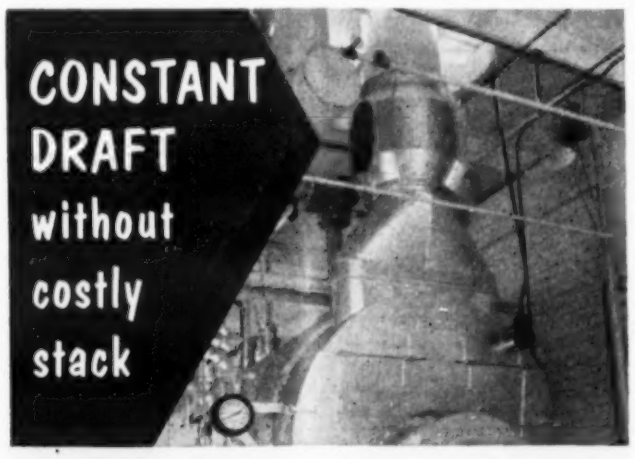
SURPLUS . . "I wish we could locate a buyer for 50,000 lengths of single braid two ply rubber hose, measuring 3/16 in. in inside diameter by 1/16 in. outside. The hose is in 42 in. lengths and is in storage in Cincinnati, Ohio." **IEN W-69**

SURPLUS . . "I wish we had a buyer for three bearings with adapters measuring 6 15/16 inches. The bearings are three Type 22338K and one Type 22238K. The four adapters are Type SNW38X. Bearings and adapters are new and in storage in Marietta, Pa." **IEN W-70**

SURPLUS . . "I wish we had a buyer for 31 bars of Type C-1018 steel in lengths ranging from 12 to 20 feet. Section dimensions are 2 by 4 inches. The steel is in storage in Tampa, Florida." **IEN W-71**

SURPLUS . . "I wish we had a buyer for about 50 Ohio Electric 1/3-hp. motors, 60 cycle, single phase, 1,725 rpm. They are Model 932J3631A, Type CS-61429, ball bearing, ventilated frame C-1632. They are in their original cartons in Marietta, Pa." **IEN W-72**

If you write maker identify as IEN - 9467



Induced Draft Bifurcator Fans provide constant draft for boilers and furnaces at a fraction of the cost of a suitable stack. These fan units install just like a flanged section of breeching. Fan motor, in chamber isolated from flue gases, is always clean, cool and accessible. Available in 24 sizes. Phone your DeBothezat representative or write for illustrated catalog on Induced Draft Bifurcator Fans.

DeBothezat Fans
Division of American Machine and Metals, Inc.
EAST MOLINE, ILLINOIS

If you write maker identify as IEN - 9468

Simple—Accurate—
WEIR METERS
for Waste Measurement

Float-and-cable Weir Meters developed by Foxboro offer simple, accurate measurement of liquid flow. Widely used in sewage, chemical processes, and industrial waste disposal.

The Foxboro Weir Meter is extremely simple. Operates through motion of float to measure head through V-notch, rectangular or Cippoletti weirs—or Parshall flumes. Motion is transmitted by cable to accurate recording or integrating mechanisms. Direct-reading, uniform flow scale—copper or plastic-covered floats.

Write for detailed information. **The Foxboro Company, 428 Neponset Ave., Foxboro, Mass., U. S. A.** Also Montreal, Canada. Branches in principal cities.

FOXBORO Reg. U. S. Pat. Off. WEIR METERS

If you write maker identify as IEN - 9469

this new WELDING DESIGN MANUAL

FREE!
FOR THE ASKING

To assist you in your re-tooling problems . . . or to help you analyze your present welding methods so that you may enjoy maximum speed, efficiency, and economy in many of YOUR production problems...

Giant new 4th Edition contains 62 new photographs, 132 new drawings, 72 pages of helpful data covering basic and advanced welding techniques and designs used in fabricating and assembly. Profusely illustrated with application drawings; weld diagrams; tables of melting temperatures, strengths, corrosion factors; charts; alloy recommendations; etc. Convenient digest size.

This just-off-the-press book is "must" reading for anyone engaged in defense production and design, and will certainly be time profitably spent for any production man.

SEE . . . The unbelievable savings in metal-joining which can now be yours through the use of "Low Temperature Welding Alloys"® discovered a few years ago and now used in over 78,000 industrial plants throughout America for more efficient metal-working production as well as for salvaging irreplaceable tool and machine parts.

Over 100 different, new, EUTECTIC Low Temperature WELDING ALLOYS® and EUTECTOR® Fluxes are job-engineered for use on ALL metals—cast iron, alloy steels, aluminum, copper and nickel alloys, die castings, overlays, etc., and may be applied with ALL heating methods—torch, arc, furnace, induction heating, etc.

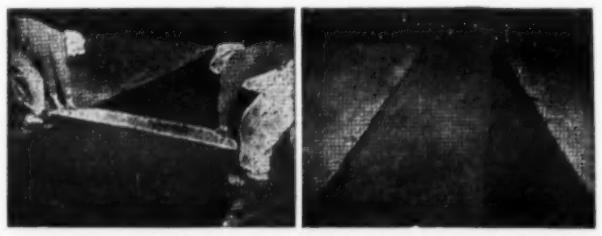
SEND FOR YOUR COPY TODAY!

EUTECTIC WELDING ALLOYS CORPORATION
172nd Street at Northern Boulevard • Flushing, New York, N. Y.

If you write maker identify as IEN - 9470

NEW FLOORS IN 24 HOURS

FLOORS LAID TODAY • READY FOR USE IN 24 HOURS



Install "PERMAFLEX" HARD MASTIC any thickness required over Old Rough Concrete or Wood Floors, Aisles, Platforms, Walks or Drives. INTERIOR OR EXTERIOR. Edges are splayed to a feather edge.

3000 LBS. PRESSURE PER SQ. IN. WILL NOT RUT
No Dust • No Chipping • No Delays to Production

We Contract for Complete Installations

Prices Are Amazingly Low

Over 2,000 SATISFIED USERS INCLUDE: General Electric — Westinghouse — U. S. Steel — General Motors — Chrysler — Atlantic Steel — A. O. Smith — Leading R. R. and Warehouse Companies

PERMAFLEX FLOORS ARE

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INSTALL COMPLETE 15c per square foot

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